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AUTHOR Goodman, Yetta M.; Wilde, Sandra
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ABSTRACT

Focusing on children's production of written language, a two-year study, conducted on the Oodham (Papago) Indian Reservation in Arizona, explored social context, linguistic systems, and the creation of meaning as aspects of the writing process. Ten American Indian children in third and fourth grade provided over 200 stories that formed the basic reseaerch material for this study. The primary tool of data analysis involved putting information about each story into a format suitable for computer manipulation. The social context was explored through a description of both classroom settings and the kind of verbal and nonverbal behavior children engage in as they write. In an analysis of the linguistic systems used in writing, the syntax in students' compositions was analyzed by looking at the length of their t-units, clauses, and phrases, and unusual and anomalous syntactic structures. An analysis of children's orthographic features considered how they used and controlled such factors as spelling, punctuation, capitalization, and letter formation. The analysis also identified the extent to which conventional and invented forms are used and explored patterns involving high and low frequency words in spelling and types of invented spelling. Variables discussed in regard to the creation of meaning included ownership and involvement, topic choice and development, genre, and stylistic choices. Findings emphasized the complexity of the creation of meaning. Statistical tables are included, as well as samples from children's handwritten stories. (JD)

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WRITING DEVELOPMENT IN THIRD AND FOURTH GRADE NATIVE AMERICAN STUDENTS (SOCIAL CONTEXT, LINGUISTIC SYSTEMS, AND CREATION OF MEANING)

Yetta M. Goodman and
Sandra Wilde
The University of Arizona

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November 1985 **No. 14**

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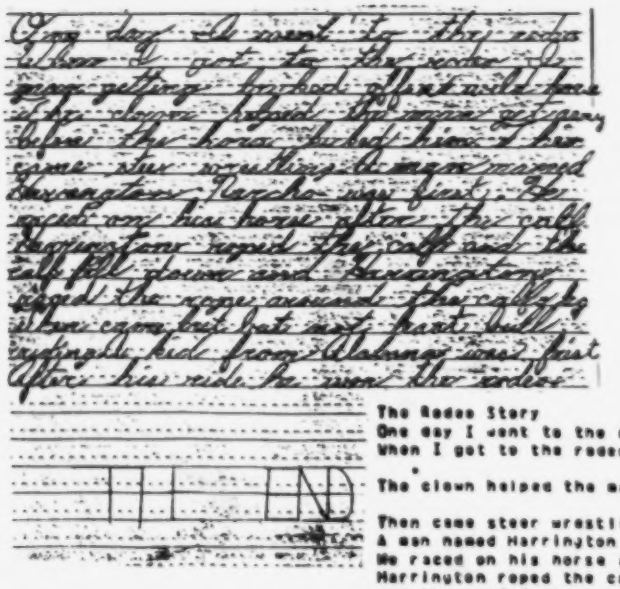
CHAPTER I
OBSERVING WRITING

Introduction

Dana's Text - November, Year I



The Rodeo Story
One day I went to the rodeo .
When I got to the rodeo , a man was getting bucked off a wild horse .
The clown helped the man get away before the horse kicked him .

Then came steer wrestling .
A man named Harrington H was first .
He raced on his horse after the calf .
Harrington roped the calf
and the calf fell down
and Harrington roped the rope around the calf's legs .
Then came last but not least bull riding .
A kid from Alabama was first .
After his ride he won the rodeo .
THE END

This rodeo story is one of 278 texts collected over a two year period on the O'odham (Papago) Indian Reservation in Arizona. The research observed 10 writers from a single third-grade classroom and continued the study with 6 of the children who remained in the district the next year.

In recent years, researchers have begun to identify and understand some of the significant variables of the writing process, especially in young children developing literacy. A significant body of knowledge is growing through case studies and classroom observations done by researchers such as Graves (1975, 1982), Emig (1969), Bissex (1980), Milz (1982), King and Rentel (1981), and Staton (1982), among others. This study uses research methodology similar to theirs (especially patterned after that of Graves and his associates, Graves, 1982) and applies it to a culturally distinct population. In order to develop broader understanding about the nature of children's writing

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development, this study provides a picture of the development of the composing process of a selected number of O'odham Indian children by analyzing samples of their writing and the accompanying field notes describing how this writing was produced in the classroom.

The writing process encompasses a child's production of written language which includes activity before, during, and after writing. This definition of writing or composing takes a time-expanded view of writing as more than just the mere setting down of words at one point in time and more than just a child's final product. The writing process includes:

children choosing or being given a topic;
children's rehearsal of that topic through conversation, drawing, or outlining;
the many interactions children engage in during writing;
the problems children solve and the strategies they use while composing;
children's examination of their product after writing;
and the language and concepts children express about their own writing or about writing in general.

The following aspects of writing will be revealed through data analysis:

Social Context: The social context is explored through describing both the classroom settings and the kinds of behaviors, both verbal and non-verbal, that the children engage in as they write.

Linguistic Systems: Results will be presented from the analysis of two of the linguistic systems used in writing. The syntax of the writers' compositions is analyzed by looking at the length of their T-units, clauses, and phrases, as well as unusual and anomalous syntactic structures. The analysis of the children's orthography involves looking at how they use and control a variety of orthographic features such as spelling, punctuation, capitalization, and letter formation. The discussion identifies the extent to which conventional and invented forms are used and, for spelling, explores patterns involving high- and low-frequency words and types of invented spelling.

The Creation of Meaning: Many variables go into the creation of meaning in written text; those that will be discussed include ownership and involvement, topic choice and development, genre, and stylistic choices.

Research Context and Methodology

The study takes place in the Indian Oasis Public School District, which covers an area of 3,000 square miles and is located entirely on the O'odham Indian Reservation, about sixty-five miles west of Tucson, Arizona. Ninety-seven percent of the student population is O'odham. Eighty-five percent of the students are bused to school, some as far as

fifty-seven miles. Approximately fifty percent of the students live either in, or within ten miles of, the governmental center of the reservation. The remaining fifty percent live in villages scattered throughout the reservation. Villages may be as far as twenty miles apart. Within one village, homes may be separated by one to five miles.

The first year, the research was conducted at one centrally located elementary school in the district, where the ten subjects were in the same third grade class. The second year, the six remaining subjects were in two classrooms in two different schools. Half of the subjects were in a specially organized pre-fourth grade at the same school the children attended for third grade, while the others were in a fourth grade class at a middle school eight miles away. In order to provide insight into the developmental range of writers in third and fourth grades, the subjects were chosen using teacher judgment with researcher corroboration to represent three developmental levels: lower, middle, and upper.

Data Collection

In addition to direct observation of children writing, data collection procedures also involved interviews with the subjects and their teachers and parents, as well as anecdotal notes taken by researchers.

Observation of Writing

Writing samples were collected at frequent intervals for each subject. Each of these writing episodes was observed by a researcher using an instrument called the Manual Observation Form, adapted from Graves, (1975). This instrument serves primarily as a format for collecting field notes about what children do as they write. A copy of it appears as an appendix. Codings such as "revision" and "rereading" were used to provide a basis for future categorization, and whenever possible were accompanied by detailed descriptions of the activity. The category system was revised over the two years in ways suggested by the data. Most texts were read by the subject onto an audio tape at the end of the observation period to be used for later clarification whenever necessary.

In addition to being observed by researchers, writing episodes were videotaped three or four times a year for each subject.

Interviews with Subjects

Two different kinds of interviews were carried out with all the subjects at regular intervals. Some aspects of the interviews were adapted from procedures used by Graves (1975).

About three times each year, interviews were conducted with the subjects to give them a chance to discuss their own writing. These interviews were called the bi-monthly interviews. After reviewing their most recent compositions, the subjects were asked to rate them from best to poorest and to state a rationale for their ratings. The subjects were then asked to rate the papers as their teacher might, again stating a reason for their hypothetical rankings.

At the beginning and end of each year, another type of interviews were held with each subject; these included questions about the composing process, handwriting, orthography, audience, genre, and characteristics of a good writer. The purpose of these interviews was to gain insight into the subjects' knowledge about language.

Teacher Interview

Bi-monthly interviews were also held with each teacher. The teacher read through the written work of each subject and was asked to rank the writing. Once the rating was completed, the teacher was encouraged to talk about each piece, sharing background information about the purpose for the assignment, her personal reaction to the piece, and her insights into the student's writing ability and development.

Parent Interview

Parents were interviewed at the end of each year of the study in order to develop a more complete picture of the literacy activities that our subjects engaged in at home, as well as to gain insight into their life-styles and interests.

Debriefing Notes

The researchers recorded any relevant observations about the classroom activities after each session including detailed descriptions of writing curriculum and instruction.

Data Base

Data collected over the two years involves ten subjects in the first year of the study and six of those ten in the second year:

278 Texts
13 Parent Interviews
63 Videotapes
32 Concepts of Writing Interviews
46 Bi-Monthly Interviews

The 278 texts contain:

17026 words	2218 T-units
2448 invented spellings	3142 clauses
1671 punctuation marks	9625 phrases

The data base also includes rich information about the context in which each student text was written.

Data Analysis

The primary tool of data analysis involved putting information about each story into a format suitable for computer manipulation. Each text was coded for invented spellings and other orthographic features, the boundaries of syntactic units and the child's observable behavior during the writing of the story. A computer program was developed to reorganize the data in ways suitable for further analysis. The frameworks developed for looking at each type of data were based on previous research, linguistic knowledge, and categories that emerged from the data themselves. They will be discussed in the appropriate sections of this paper.

CHAPTER II
WRITING IN THE SOCIAL CONTEXT

Any act of composition takes place in a social context. Two aspects of context are relevant here: classroom settings in which the research took place; and the kinds of activities the children were involved in as they wrote.

Classroom Settings

This study took place in three different classrooms, one third grade, one pre-fourth grade, and one fourth grade. Each teacher had her own individual style and philosophy about teaching and writing; the only commonality is that all provided time for writing on a regular basis. Although the researchers had many informal interactions with the teachers about writing curriculum and instruction, we were mainly observers in these classrooms, accepting what we found and making no attempts to influence instruction or to impose ideas about the writing process. The classroom descriptions that follow depict the research setting and are non-judgmental in intent; that is, we are neither endorsing nor disavowing the teaching practices nor the environments in which they occured.

The first year of the study took place in the district's primary school, which is located in the largest town and administrative center of the reservation and consists of all the kindergarten through third grade classes for the whole district, with about three classrooms at each grade level. Some of the teachers live in the community and some commute daily from Tucson, some 70 miles away. The principal has lived and worked in the community for several years.

Linda Howard's Third Grade Class

Linda Howard (pseudonyms have been used for all teachers and children), the teacher for all 10 subjects during the first year of the study, knows and respects every one of her students as an individual with special needs and strengths. She is a hardworking and creative teacher and spends hours designing elaborate units and bulletin boards and other materials. She believes strongly in the value of writing as an instructional tool, and integrates writing "across the curriculum".

Ms. Howard sets up her instructional program using twenty-minute work periods. Students spend time at learning centers during the morning and part of the afternoon, leaving the rest of the afternoon for sustained silent reading, special projects and other activities. In most cases the children work in groups on assigned tasks which they complete in the specified time. After roll call and lunch count, a typical day begins with a teacher- directed, whole group discussion of the day's activities and lessons. During this time, Ms. Howard often conducts special whole group lessons or shows filmstrips and movies.

Ms. Howard divides the students into six groups. She explains to the children that they are not grouped on the basis of ability but because "they work well together." The students move, as designated groups, from center to center, until they visit each center, usually four or five of them in the morning and the remainder in the afternoon. Every 20 minutes, an egg-timer bell rings, alerting the children that they have five minutes to clean up and to move to the next center. At the writing center, students develop a sense of how long 20 minutes is and gear their work to this time constraint. Sometimes when students want to complete a story before the time is up, they write quick conclusions rather than putting away an unfinished story.

Almost all classroom writing is assigned, related either to holidays or to instructional units. Thus the children wrote stories connected with each of the major holidays--Halloween, Thanksgiving, Christmas, Valentine's Day, and Easter--as well as for special events such as the rodeo and carnival.

Ms. Howard builds writing into her entire program, so that the children experience writing in social studies, science, language arts and health. The social studies units during the year of the study included the fifty states, early Papago life, life in Switzerland, and ancient Egypt. The major science unit centered on space and the nine planets, and the language arts units included fairy tales, tall tales, just-so stories, and haiku. In addition, there was one health unit concerned with fire and bicycle safety.

Assigned writing in Ms. Howard's room covers a variety of functions and ranges from narrative stories to letter writing to expository reports. The children were also asked to write in journals, but due to a lack of time these were not continued. In addition, Ms. Howard's children wrote haiku during a Japanese poetry unit.

As a rule, Ms. Howard introduces a new writing assignment with an example. For instance, during the Tall Tales unit she read the students stories about Paul Bunyan, Pecos Bill, and John Henry and then encouraged them to write similar stories about their favorite Tall Tale hero. On another occasion when the class was studying the nine planets, Ms. Howard told the children about an imaginary trip that she had taken in her spaceship and what she had seen out her porthole once she had landed. She then requested that they write a similar story using her story as a model.

After the initial introduction to a writing activity, the class as a group generates possible story titles which Ms. Howard writes in black letters on large sheets of tagboard. She then hangs these on the wall near the writing center. When the children arrive at the center, they usually take a few minutes to scan the list of titles before choosing one and settling down to write a story to fit their selected title.

For some of the units, Ms. Howard made elaborate bulletin boards and tagboard folders with pictures and lists of questions designed to

stimulate the students. During the circus unit, for example, she created folders of colorful circus photographs with a caption under each picture, such as "You have run away from home to join the circus. Which circus act are you going to be?"

Once, based on our suggestions, Ms. Howard did encourage the children to write about a topic of their own choosing. However, since her instruction is so intimately tied to writing, she believes it is necessary to assign topics that are related to the unit the class is presently studying. She also said that she believes that assigned topics help children become better writers.

Ms. Howard instructs her students to bring their completed first drafts to her for editing. Time permitting, she usually asks them to read their pieces to her first. Then together she and the child go back over the piece; Ms. Howard usually discusses and circles all misspelled words, incorrect syntax, punctuation, and other writing features. On occasion, Ms. Howard also spends an editing session helping the child express meaning more effectively. Towards the end of this first year of the study, she allowed some of the more capable students to handle their own editing. Once the editing is completed, the children know they are expected to copy the corrected first draft over on a new sheet of paper. Some stories are made into bound books.

Ms. Howard also has a specified grading policy. Students are given a weekly grade for writing; at the beginning of the school year, the children had to produce a minimum of three stories and one "bound book" in order to obtain an "outstanding" grade that week. About mid-year, after Ms. Howard decided her original policy was too demanding, this policy was changed to two stories and one book per week.

Susan Caldwell's Pre-Fourth Grade Class

Three of the study's original subjects were in Susan Caldwell's pre-fourth grade classroom in Year II of the study. They were in the same school that they were in during Year I of the study, which usually contains only Grades 1-3; fourth graders normally go to the intermediate school eight miles away. Ms. Caldwell's pre-fourth grade of 21 children consisted of those children whose third grade teachers felt they weren't ready for the more rigorous academic demands of fourth grade in the intermediate school. The plans were that all of the children would be in the fourth grade the next fall.

Ms. Caldwell's schedule consists of several major types of activity which remain fairly consistent throughout the year. Every day, either at the beginning of the morning or after lunch, there is a free reading period of 20 minutes or so. The children spend this time reading silently or reading aloud to each other in small groups. The class works as a whole group for math and writing. A large chunk of the day is spent in small groups which move between four learning centers consisting of half an hour each. Since a major purpose of the groups is to provide for reading group time with the teacher, the

children are grouped according to reading ability. The centers vary in content depending on what aspect of the curriculum is being covered. One group works on reading with the teacher, one group works with the classroom aide, one group usually does some form of writing, and one group is involved in some other non-teacher-directed activity. The group activities range from reading instruction to theme-related activities to language pattern activities. Expectations for the groups working independently are made clear and these sessions operate very smoothly. The schedule as a whole is a flexible one which provides a predictable framework for a variety of activities but changes somewhat depending on the curriculum and the children.

Since Ms. Caldwell views the children in this specially organized pre-fourth grade class as having special needs and problems, her primary goal for the year was to get her students to work well together as a class unit. As she felt this goal was being accomplished, she devoted increasingly more energy to her second goal, that of getting the children "up to fourth grade level" in all areas of the curriculum. Another important goal, which is obvious in everything she does, is that of treating the children with affection and respect. The children are assumed to be interested in learning, and, in fact, they do feel that they are partners in learning with the teacher.

Ms. Caldwell believes that her students are very interested in writing, and she takes advantage of this. Children usually write twice a day. During one of these episodes, the whole class writes on self-selected topics. During the first few months of the school year, the children would spend half an hour drawing and coloring pictures and were then asked to write four sentences about their pictures. As the year progressed, Ms. Caldwell believed they no longer needed to respond in writing to a picture, so that this step was eliminated in November. The writing time is virtually always followed by a sharing time when many (and often all) of the children read their stories to the class. One goal of this activity is to help the children feel more comfortable speaking in front of a group. The time allowed for writing and sharing is about an hour, but runs longer if necessary. The sharing time is also used by Ms. Caldwell to answer student questions, suggest new directions for their writing, and for planned instruction which is related directly to the children's writing.

The group writing time is a lively one, filled with a good deal of informal interaction. As a result, the children get many ideas for topics from each other. For example, during September many of the children drew and wrote about the desert for days on end. Pac Man and E.T. also emerged as popular topics in the fall.

The children also write most days in a "creative writing" center. When Ms. Caldwell is discussing the day's centers with the class, she will often mention what they might choose to write about. Some days there are pictures or story-starters available, other days she suggests that they write about a content-related topic. They always have the option of writing on a topic of their own choosing. Again, if children have no ideas at first, they often get them from the small group

interactions.

Most of the children's stories remain in first-draft, unedited form. Some editing occurs on an episodic basis. For instance, the teacher occasionally meets with small groups to suggest what changes should be made in order to make a story into a book. Occasionally the teacher meets with groups for other purposes related to writing. For instance, if several children are having problems with capital letters, she may call them together to work as a group. She also has a few sessions of peer editing, where she meets with groups and guides them in learning to be effective respondents to each other's work.

To summarize, Ms. Caldwell's use of writing in the classroom can be characterized as being informal in tone although directive and purposive. The informality is evidenced in the children's freedom to choose their own writing topics with teacher support and suggestions when necessary and to interact freely while writing. Ms. Caldwell's direct involvement in the children's writing is also informal, but reflects very definite goals. She has a good deal of skill in taking advantage of naturally arising opportunities for learning; some of these are spontaneous and some planned, but all arise out of a sense of the children's capabilities and interests. Writing instruction in Ms. Caldwell's classroom is always directly related to the children's own work; she was never observed conducting a formal, out-of-context writing lesson.

Darlene Pagett's Fourth Grade Class

Three of the subjects from Year I of the study were promoted to Darlene Pagett's fourth grade; she teaches in an intermediate school which is eight miles from the primary school and serves grades four through six for the entire district.

A typical morning in Ms. Pagett's class consists of a math lesson for the entire class, followed by the students working on up to four assignments which are listed on the board. One of the assignments typically is the follow-up to the math lesson. Others include dictionary skills, an English or social studies lesson, and a writing assignment. Students can choose the order in which they will complete the assignments, aware that all of them must be completed by lunch time. For students who do not complete their work, recess time is set aside.

Students are encouraged to raise their hands if help is needed. They are expected to talk as little as possible and requested to remain in their seats, although quiet talk and interactions are condoned and seldom interrupted.

For most subjects, whole class activities and instruction predominate. Plants growing from seeds, weather pictures, and model volcanoes were displayed at various times. One day molds were growing on the back bookcase, carefully dated and labeled. One social studies lesson focused on the Southwestern United States. Assignments reflect

Ms. Pagett's recognition and appreciation of the significance of Native American heritage and culture, and include writing and reading Native American style legends and stories with a focus on the O'odham. Ms. Pagett occasionally played a traditional Papago game with her class which is similar to soccer. Physical fitness is encouraged during recess, including a one-mile run in which the teacher participates with the class. Ms. Pagett reads children's novels to her class.

Although Ms. Pagett is personally interested in and committed to writing, she frequently stated that her curriculum during the year of the study was hampered by discipline problems early in the year. She never engaged her class in some activities that she had originally planned, including journal writing and conferencing.

All class members maintained correspondence with pen pals from another small Arizona community. Almost all writing is teacher-assigned, including retellings of films shown to the class, creating stories from pictures, and coloring imaginative designs with accompanying stories. The assignments are designed to give the students varied experiences in writing. Occasionally, some of the assignments are edited and proofread, as, for example, stories the class wrote in preparation for a writing conference.

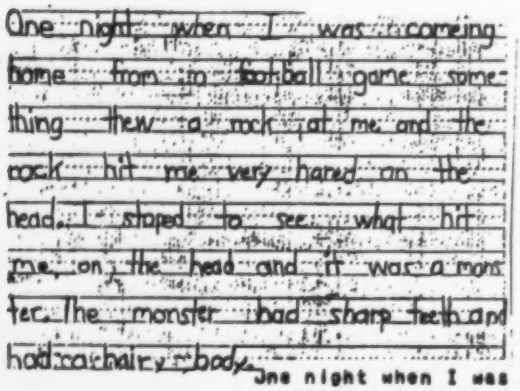
Summary

We were fortunate to have the cooperation of three different teachers during the course of the study. Although there were similarities, each teacher had a different curriculum focus for the year. Ms. Howard developed units which introduced students to a wide variety of content, Ms. Caldwell emphasized self-concept and social interaction, and Ms. Pagett stressed the land and culture of the Southwest. All three teachers provided regular time for writing, each using it in a way that suited her curricular goals and teaching style. We were thus able to observe children's writing in a variety of contexts.

Classroom Activities

In November of the second year of this study, Gordon wrote the following story:

Gordon's Text - November, Year II



One night when I was coming home from a football game something threw a rock at me and the rock hit me very hared on the head. I staped to see what hit me on the head and it was a monster. The monster had sharp teeth and had a hairy body.

One night when I was coming home from a football game something
threw a rock at me
and the rock hit me very hard on the head .
I stopped to see what hit me on the head
and it was a monster .
The monster had sharp teeth and had a hairy body .

Here are some activities in which he was engaged during the half hour or so it took him to write it:

- Gordon gets up to change the date on the calendar, then spends 2-3 minutes putting the cards with the days on them in order before returning to the writing center.

- He asks, "Does coming home from the football game mean that you were going home from the football game?"

- "Does football game go together?" (i.e., should it be written as one word?). He decides that there should be a space between FOOT and BALL, but smaller than the usual one between words because "they're together."

- Gordon looks up and whistles trying to get the researcher's attention to show her he'd used a hyphen, which they'd discussed previously.

- He looks at the GUINNESS BOOK OF WORLD RECORDS with Gary and Susan.

- Gordon tells Gary he's just made a period in the shape of a diamond which he later erases.

- He talks with Gary about Elvis Presley, they sing bits from favorite songs, and talk about the movie THE WALL.

- He asks Gary about his story, then sings a line from THE WALL: "Hey teacher, leave those kids alone," and talks about the movie some more.

- Gordon spends 5 minutes talking about the carnival, the rodeo and

movies with Gary.

- He asks the researcher if she "smokes weed" and talks about people he knows who do.

- Gary asks the researcher if any words start with X. Gordon says "exorcist," and he and Gary talk about that and other scary movies.

- Gordon rips his paper while erasing, pretends to cry,looks to see if the researcher wrote that down, looks for tape, fixes the rip, talks about his fingerprints on the tape.

- Gordon says to the researcher, who he knows won't tell him how to spell words, "How do you spell SHARP? Just spell me it once." (said in a pleading tone)

This description gives a sense of the rich personal, interpersonal, and environmental context in which writing takes place in the classroom. When students write in a classroom, a host of activities accompany the actual writing and form a dynamic part of the literacy event. We collected data on the activities or behaviors which accompanied the writing and defined, categorized, and analyzed them. From the beginning of the study, the field notes collected on the Manual Observation Form (see Appendix) included coded indications of the specific points in the text when various types of activity occurred. The categories provided a way of organizing a complex variety of data. Nine categories were eventually settled on; these encompassed virtually all of the children's activities during writing:

1. Drawings - any graphic design not part of the language.

2. Interruptions - overt verbal or non-verbal interactions which do not seem directly related to the composition. Includes solicited interruptions, which are initiated by the subject, or unsolicited interruptions initiated by the teacher or peers and including such distractions as bell ringing or classroom commotion.

3. Resource use - solicitations by the subject of spelling, ideas, or other feedback related to the composition. Resource use may be inanimate, such as dictionaries, pictures, and writing on blackboards, or human, such as asking someone a question about the writing.

4. Rereadings - silent or oral readings of any part of the composition initiated by the subject at any time prior to being asked to reread by the researcher at the end of the writing episode.

5. Related talk - comments or conversation (other than resource use or teacher talk) related to the writing the subject is doing or the writing process in general.

6. Revisions - written changes to the text, of handwriting, spelling, or content, usually indicated by erasures or crossing out.

7. Stop and think - pauses without overt language time the subjects appear to be thinking about their composition.

8. Subvocalizing - rehearsing, sounding out, spelling out, and subvocalizing during the actual composing by the subject. Includes speech, whispering, or mouth movements of phrases, words, letters or sounds.

9. Teacher involvement - interactions between the teacher and the subject directly related to the child's composition. Teachers' interruptions which appear not to be directly related to the composition are coded under interruptions.

The frequency of each of these behaviors in the 2 years of the study is illustrated in Table I. (All figures are in terms of occurrences per hundred words and refer to those six students for whom there is data for both years.)

Table I: Behaviors per 100 words

	Year I	Year II	Both Years
Revision	8.29	11.51	10.11
Subvocalization	7.47	9.39	8.56
Interruption	5.71	5.79	5.76
Stop & Think	4.36	6.32	5.47
Resource Use	3.87	4.26	4.09
Related Talk	2.87	3.80	3.39
Rereading	2.85	3.42	3.17
Drawing	0.02	0.33	0.20
Teacher Involvement	0.10	0.23	0.17
All	35.54	45.05	40.91

The figures in Table I represent the number of behaviors per hundred words written that the researchers were able to observe and code and can therefore be seen as a systematic but not fully exhaustive reflection of that activity. Or, to put it another way, there was at least this much activity going on but there may have been more. Kasten (1984), one of the researchers for this study, has done an in-depth

study of all these behaviors and their interrelationships.

These behaviors fall into two categories: 1) active writing behaviors, and 2) supportive writing behaviors. The first category includes behaviors that occur while a writer is actively engaged in composing. This category includes (in order of frequency): revision, subvocalization, stop and think, resource use, and rereading. These kinds of behaviors seem to be closely related to actual text production in that they typically occur while the writer has pen or pencil in hand. They involve the production of written language on paper, reading it, changing it or thinking about it.

The second category, supportive writing behaviors, are those behaviors that seem to represent a different level of engagement in the composing process; the pen or pencil is not generally in hand, although the more global, overall process of writing is in most cases still in operation. This includes interruptions, related talk, drawing, and teacher involvement. Although these behaviors at times signal off-task behavior, in most cases they are related to the overall composing process. Since these behaviors rarely occur in isolation from each other, examples of their influences will be best seen as part of the ongoing act of writing examples of which will be presented later.

Active Writing Behaviors

The actual writing of a text is seldom uniform or continuous. Instead, writers subvocalize, reread, revise, stop to think and also make use of a variety of resources.

The process of REVISION during first draft writing has been cited by many writing researchers as significant in the development of writers (Graves, 1983; Beach, 1976). We use the term revision to refer to any change that the writer makes to the text, whether it is for orthographic, syntactic, semantic or pragmatic purposes.

Although all the subjects were observed making revisions throughout the study, revisions increased by 39% from the first to the second year. Writers varied in the frequency or consistency with which they revised. A number of variables were examined to see if they had an effect on the amount of revision. Genre, length of compositions, whether sessions were video taped, and whether writing was assigned or open ended did not seem to make a difference in the relative frequency of revisions.

The subjects tended to revise, for the most part, on the local text level; that is, they changed their handwriting and corrected their spelling and punctuation. Few revisions changed the overall content or direction of pieces. Subjects revised in different ways depending on what they seemed to value about writing and their overall model of the writing process.

Anna provides many examples of this complexity. Early in the two year study she shows that she knows how to revise. She rereads her

writing as she writes, inserts omitted punctuation, and checks various resources around the room for the information she needs to conventionalize some of her invented spellings. She erases letters she thinks she has formed inappropriately. However, if she gets very involved in her writing, she pauses only rarely, for very short segments of time - less than five seconds. She may occasionally ask for or look around for a spelling word, but if she writes it down she does not stop to revise if she thinks it is wrong.

During her interviews she shows that she knows the importance of spelling when she says it is important "'cause you get to know words when you write them" and "so you can read what the story says." She is even consciously aware of more sophisticated aspects of revision when she shares what she needs to do when her writing isn't good: "When it's boring you went to trade things around so it'd be kind of exciting".

When she does revise, however, it is usually at the word level in order to: correct spelling, "make it neater," include words left out, or delete an inappropriate word or phrase. In one of Anna's stories at the end of the second year of the study the word BOUGHT was spelled BOUTH. Mark, working across the table from Anna, read her story after it was finished and actually went to the trouble of looking up the word in the dictionary for her since they both knew it was misspelled but neither knew how to correct it. Anna decided not to change it. She said to Mark, "This time it doesn't matter."

Revision by our subjects was influenced by the nature and extent of writing instruction, sense of audience and purpose for writing, and the evaluation of writing in a particular classroom.

During the study, all of the subjects SUBVOCALIZED at least some of the time. Subvocalization refers to the rehearsing, spelling out, or sounding out of portions of the text during the act of writing. It may be audible or not, it can include whispering or mouth movements. Graves (1982) is one of the few researchers who discuss the possible significance of subvocalization on the evolution of text. Although all the subjects subvocalized to some degree, some were extensive subvocalizers while others subvocalized very little. Most of the writers had writing episodes where no subvocalization was observed in both years of the study. Writing episodes where more subvocalization was observed did not seem to fit any common patterns.

Examination of some videotaped sessions suggests that subvocalization is probably more extensive than can easily be captured through observation. Students would sometimes work closely at their writing with heads tilted down. This made it difficult for anyone positioned next to them to see any mouth movements. Therefore, the quantity of subvocalization should be viewed as minimal rather than as a complete representation of the extent of subvocalization.

All writers STOP AND THINK while writing. There are many reasons and circumstances that influence when and why writers pause and appear to be thinking about their writing. Interview data showed that some of

our writers were wondering what content they should write next, while others were thinking about which word to use next and where to find its spelling. Not all pauses, of course, were related to the students' thinking about their writing.

RE-READING can be silent or oral and refers to subject-initiated reading of any portion of the composition at any time prior to the end of the writing episode. In both Years I and II, all subjects were observed rereading while they were writing, which supports the conclusions of Graves and Murray (1981, p. 114) about the importance of rereading during writing. Although most subjects showed an increase in the incidence of observed rereadings in Year II, its frequency from story to story follows a variable pattern rather than showing steady increases.

A number of aspects of rereading need to be studied further. At what points in the text do subjects reread? Is rereading related to the process of self-monitoring and self-correcting? Perl (1980, pp. 365-366) suggests that rereading may occur because of the author's sense of lack of clarity during the process of writing. This is similar to the strategy of self-correcting in the reading process (Goodman and Goodman, 1978). How does revision fit into this notion of self-monitoring of the writing process? Is there a relationship between rereading during writing and regressions during the process of reading? It seems as though the classroom environment, teacher assignments, and sense of audience all contribute to a writer's rereading strategies.

A very important behavior that accompanies writing is the use of RESOURCES; its significance is discussed by Calkins (1981) and Keaten (1984). Resource use is the solicitation by the writer of all kinds of knowledge related to the composition. Some resources are physical, such as dictionaries, pictures, bulletin boards or writing folders, while other resources are human, like asking someone how to spell a word or where to end a sentence. Our subjects used all of these.

Resource use reflects the writer's awareness of how the literacy community can be supportive to the production of text. It is influenced by the organization of the classroom, how mobile the children are allowed to be, and the accessiblity of materials. This is particularly evident when comparing resource use in the two different classrooms of Year II. The children in the pre-fourth grade classroom, where resource use was encouraged, showed a 135% increase in frequency of resource use as compared to Year I (from 3.1 to 7.3 per hundred words). The subjects who went on to the regular fourth grade, where mobility and resource use were not encouraged, showed a 45% decline in its frequency (from 3.3 to 1.8 per hundred words).

The type of writing assignment did not affect resource use. Some subjects tended to be more extensive users of resources than others.

Supportive Writing Behaviors

Some behaviors that are observed during the composing process tend to occur when the writer is not actively producing text; that is, when the pencil is not in the writer's hand. Yet these behaviors are important aspects of composing.

For example, writers frequently talk during their writing episodes. If subjects spoke during writing but this talk was not related to their writing, it was coded as an INTERRUPTION. Interruptions were defined as overt verbal or non-verbal interactions or actions, whether solicited by the subject or by some other stimulus. For example, a student saying "It's time to clean up," or talking about a movie unrelated to the writing are utterances that are interruptions. They are not directly related to the fact that a subject is writing, and could happen at any time. Some interruptions do not include any oral language, such as when subjects are distracted by someone entering the room, the school bell ringing, or a kick from a classmate.

Some interruptions represent a form of off-task behavior: when subjects talk about what's for lunch, discuss a movie they saw on television, grab a neighbor's pencil, or borrow a better eraser. There are times, however, when the offhand remark about a movie or the action of the grabbed pencil do become part of a subject's writing process. On a number of occasions our young writers stop to listen to a conversation of nearby students and in the course of listening get new ideas which they incorporate into their writing. A number of interruptions occur when subjects stop writing their own composition to read the composition of other classmates, or listen to them reading their stories aloud. These interactions contribute to writers' concern for audience. In addition, sometimes a writer interrupts his or her own writing in order to serve as a resource for another writer; for instance, to help in spelling a word, supply a pencil, or respond to an idea.

At other times, interruptions are an avoidance of the writing task. For example, on one occasion in Year I, Dana spends 25 minutes flipping through reference books looking at pictures, with no apparent intention of using those books for resources. In this case both interruption and resource use combine to keep Dana from his assigned task of writing a story about the Arizona state seal. Dana is confused about the assignment and delays beginning it as long as possible. Dana knows that since he looks busy and involved, his lack of writing will probably go unnoticed. (However, Kasten found that at least 80% of all behaviors involving talk (revision, subvocalization, interruption, resource use, related talk and rereading) were directly related to the writing the children were involved in.)

Interruptions may be more or less disruptive of the overall process of composing, depending on the nature of the interruption. Also, interruptions often occur in conjunction with other behaviors, and seem to be related to the other behaviors. For example, an

unsolicited interruption like a loudspeaker announcement sometimes caused writers to have to reread some portion of their texts in order to resume writing. That rereading process might in turn lead to a revision in the text.

Some occasions of student talk are directly related to the writing. For example, "I don't know what to write," "What should I write next?", and "There, I'm done," are all utterances that occur because writing is taking place. This language was coded as RELATED TALK. Related talk was defined as comments or conversation other than resource use that is somehow related to the fact that the subject is engaged in writing.

Every subject was observed engaged in related talk in both years but no subject was observed to be engaged in related talk in every single writing episode. Some subjects had more observed incidences of related talk and tended to talk more consistently. There are more incidences of related talk in Year II than in Year I, partly because the researchers took an increasingly active role in interacting with students about their writing as the study went on. This category provides a good deal of information about the supportive role of peers as well as of the adult members of the literacy community in the classroom.

Drawing would occasionally accompany the writing process, but generally occurred only when it was part of the assignment rather than because a student chose spontaneously to draw. Often the students were expected to complete any artwork before actual writing began. Drawing was used in a number of different ways. In Ms. Caldwell's class (Year II), students were often assigned to draw a picture and then write a story about the picture or write to describe the picture that they drew. In Ms. Pagett's classroom (Year II), students were asked to interpret scribble line patterns by first making them into a picture and then using their drawing to create a story.

Although drawing was not used much by the subjects in this study, we do not minimize its significance to the writing process. In other classroom settings where illustration is encouraged as part of composition, drawing plays a more important role in the process (Siegel, 1984).

Teacher involvement relating directly to the child's composition seldom occurred. When a teacher and student interacted, it usually was coded as an interruption or a resource use. In other types of classrooms where ongoing conferencing is an integral aspect of the classroom procedure this category would be more useful than it was for this study. Any conferencing that went on in these settings did not generally occur during the first draft stage that we observed.

The numbers and interrelationships of observable behaviors that occur during writing show the complexity of the writing process. They also provide evidence of ways in which authors make use of the linguistic system as they create meaning through written language.

CHAPTER III
USING LINGUISTIC SYSTEMS

Since writing is a language process, whenever it goes on the writer uses linguistic systems as the framework in which meaning is expressed. An overview of what we learned about these children's use of syntax and of orthography (spelling and punctuation) suggests that they use their knowledge about language in complex and sophisticated ways.

Syntax

From the detailed analysis of these students' syntax, we are able to make and illustrate several statements about their use of the syntactic system. (Goodman, 1984, pp. IV-27 ff.)

1. These O'Odham students show English syntactic development comparable to that of other populations.

The subjects produced 2218 T-units over the two year period. Table II shows clause per T-unit and word per T-unit statistics for our subjects (I.O. grade 3 and I.O. grade 4) and compares their results with statistics from four other studies (Milz, 1983; O'Donnell, Griffin, and Norris, 1967; Hunt, 1966, 1970; Ward reported in Milz, 1983).

Table II - T-unit Development: Five Research Studies

T-unit Development: Five Research Studies

TABLE IV-12 T-UNIT DEVELOPMENT : FIVE RESEARCH STUDIES

	MILZ GRADE 1	WARD GRADE 2	O'DONNELL GRADE 3	I.O. GRADE 3	HUNT GRADE 4	I.O. GRADE 4	HUNT GRADE 8
CLAUSE/T-UNIT			1.18	1.40	1.29	1.43	1.42
V				1.73		1.58	
D				1.36		1.4	
A				1.43		1.39	
B				1.18		1.28	
E				1.16		1.32	
G				1.61		1.58	
WORD/T-UNIT	5.46	6.98	7.67	7.14	8.51	7.54	11.39
V				8.5		8.8	
D				7.21		7.8	
A				6.77		6.58	
B				6.0		6.02	
E				5.8		6.74	
G				8.64		8.31	

For our study, we used only the data from the six subjects who were in both years of the study, so that the comparison represents the same children across time. The average number of clauses per T-unit

for each subject rangesfrom 1.16 to 1.73 with a mean of 1.4 in Year I. This mean is higher than Hunt's mean of 1.3 for his grade four subjects. In Year II, our subjects clauses per T-unit range from 1.28 to 1.58 with a mean of 1.43. This is somewhat higher than Hunt's grade 4 subjects and similar to his grade 8 subjects. Clauses per T-unit do not change much statistically across time as the means between Hunt's fourth and eighth graders show. However, these results indicate that our subjects are producing a slightly higher mean number of clauses per T-unit than other fourth graders in other studies.

Our third graders have slightly lower words per T-unit than do O'Donnell's third graders or Hunt's fourth graders. However, in both years we do have individual subjects who produce more words per T-unit than either O'Donnell's or Hunt's subjects' means. The mean for our students is higher than that of Ward's second graders. Our subjects produce 0.4 more words per T-unit in fourth grade than in third grade. Viewing the Milz, Ward and O'Donnell, Griffin, and Morris studies, there is a definite developmental trend statistically from grade to grade. One problem in this comparison is the variety of writing tasks used by the subjects in the different studies. Only more in-depth analysis can account for the development and differences reflected in the statistics. However, there is no evidence here that the writing of our subjects lags behind that of children from other cultures in any important way.

We tested the clause per T-unit and word per T-unit data of the six subjects over two years for significance. The growth in clauses per T-unit was significant at the .01 level while words per T-unit growth was significant beyond the .0001 level.

2. These students used primarily declarative, non-dialogue sentences, but were capable of using other sentence types as well.

Table III shows a breakdown of T-unit types.

Table III
T-unit Types: Years I and II

	Year I		Year II	
Texts	176		102	
Total T-Units	1236		982	
Declarative	1202	97.2%	925	95.2%
Interrogative	29	2.3	39	4.0
Exclamatory	1	0.1	2	0.2
Imperative	4	0.3	16	1.6
Dialogue	84	6.8%	84	8.6%
Non-Dialogue	1152	93.2	898	91.5

Most of the T-units produced by the subjects were declarative

statements, but the subjects also produced exclamations, imperatives, and interrogatives. In the first year of the study, 97.2% of all the T-units produced were declaratives, while in the second year only 95.2% were. Interrogatives, exclamations and imperatives are all used infrequently, representing about 4% of all T-units, but they all increased in use from the first to the second year. Dialogue is also used to a greater extent in Year II than in Year I.

3. These students used a variety of clause types.

As shown in Table IV, about 72% of clauses used by the subjects were main (independent) clauses; the remainder were conjoined, nominal, and adverbial ones, suggesting that the subjects are able to create a variety of sentence structures. They are not limited to choppy, single-clause T-units but are able to produce the more complex sentences associated with subordinate clauses.

Table IV
Clause Types: Years I and II

	No.	Year I%	No.	Year II%
Main	1236	71.4%	1015	71.8%
Conjoined	159	9.2	103	7.3
Adverbial	163	9.4	160	11.3
Nominal	174	10.0	136	9.6
Total	1732		1579	

4. These students showed few problems in using syntax appropriately.

As part of the analysis, we flagged syntactic and cohesion problems of various types.

COHESION problems in most cases involve pronoun referents. Examples include:

Pronoun referent - HE SHOT AT HIM AND HE DIED. (Not clear who each HE refers to.)
Semantic incongruity - I STAYED WITH MY FRIEND MAY. (In a story about Saturn with no previous introduction of May.)
Picture referent - THE GREEN FIELD STANDS FOR . . . (Referent is not within the story but in the picture which the student is writing about.)

SYNTACTIC problems are those involving lack of control of various syntactic constructions. Examples include:

lack of subject/verb agreement
inappropriate use of prepositions - SOMETHING CAME DOWN OF THE SKY
inappropriate pronoun form - HE for HIM

MULTIPLE problems are those which involved both syntax and cohesion.

COMPLEXITIES were coded whenever something sounded unusual to the researchers but did not fit in the other categories. Examples include:

oral language forms used in written language - OUR CLASS WAS SCARED, REAL SCARED.
uncommon usages -- IT WAS 50 OR 40 FEET TALL.

None of these problems occurred often, and all (except for a slight increase in cohesion problems) decreased from Year I to Year II.

Table V
Problem Types and Frequency

	Year I		Year II	
	Number	Number per 100 words	Number	Number per 100 words
Cohesion	21	.23	21	.28
Syntax	116	1.32	73	.98
Multiple	10	.11	1	.01
Complexity	71	.81	33	.44
	218	2.49	128	1.71

Year I = 10 subjects (8761 words)
Year II= 6 subjects (7483 words)

From the analysis of syntactic use and the development of syntax in our subjects, we suggest the following conclusions:

The subjects are writers of English. All the structures they use are part of English syntax. They use all the major syntactic patterns of English, as well as many patterns that are less frequent. They basically control these patterns from the beginning of third grade. Over the two year period their sentences tend to become longer and more complex and they use a larger percetage of dependent clauses. These results are cumulative for all stories and for all subjects combined, even though there is wide variation on a story-by-story or child-by-child basis.

Orthography

The students' use of orthography was examined through analysis of spelling, punctuation, capitalization and letter formation.

Cumulative Data

Our subjects used 17,026 words in 278 stories over the two-year period of the study. Of those words, 14,578, or 85.6%, were spelled conventionally. The data base therefore includes 2,448 invented spellings (14.4% of the words). Comparisons between Years I and II will be made primarily on the basis of the six children for whom we have two years of data.

Between years I and II, all of the children except for Elaine showed an increase in percentage of conventional spelling. (In Elaine's case, this may be related to a decision on her part to put less emphasis on trying to spell correctly.) For the six children as a whole, conventional spelling represented 84.6% of all words in Year I and 87.6% in Year II. The increase, though small, is significant beyond the .0001 level.

High and Low Frequency Words

There are 1,179 different words used over the two-year period. The 26 words of highest frequency make up only 2.2% of the different words used, but are used 9,475 times and thus make up 43.9% of the total number of words used. These 26 words are spelled conventionally 97.5% of the time over both years, and this level of control was similar during both years. (In Year I, the 25 most frequent words were spelled conventionally 96.9% of the time; in Year II, the percentage for that year's 25 most frequent words was 97.3%.) This suggests that these children entered third grade already controlling the spelling of the most common words in their written language.

In contrast, of the 692 words used only once over the two-year period (which make up 58.7% of the different words used but only 4.1% of the total words), there are 310 invented spellings, or 44.8%. Another way of stating this is that 310 invented spellings, (13% of the total) occured on 4% of words used, while only 185 invented spellings (or 7.6% of the total) occurred on words making up 43.9% of all text. The very low-frequency words were 18 times as likely to have invented spellings as the high-frequency ones.

These results are, of course, not unexpected. It makes sense that children are more likely to know how to spell words that they use more frequently and that they won't know how to spell words that they haven't used before. If childen are continuing to grow as writers and to explore new topics using new vocabulary, they will continue to have a certain percentage of invented spellings. A child who always spells perfectly is likely to be a child who is not using new words or taking very many risks.

Table VI shows the 26 words which were used 100 or more times during the two years of the study, the number of times each was spelled conventionally or invented and the percent of conventionality for each.

Table VI
High Frequency Words: Years I and II

	Frequency	Conventional	Invented	Percent Conventional
the	1,227	1223	4	99.67
and	686	679	7	98.98
I	594	594	0	100.00
to	585	581	2	99.32
a	479	478	1	99.79
was	478	475	3	99.37
he	311	309	2	99.36
went	267	248	19	92.88
we	240	240	0	100.00
it	238	227	11	95.38
in	211	211	0	100.00
one	199	197	2	98.99
then	195	186	9	95.38
day	192	191	1	99.48
they	180	163	17	90.56
is	149	148	1	99.33
said	149	110	39	73.83
got	147	136	11	92.52
ay	147	147	0	100.00
when	125	116	9	92.80
his	123	113	10	91.87
of	119	111	8	93.28
on	116	114	2	98.28
she	110	109	1	99.09
there	108	91	17	84.26
but	100	91	9	91.00
Total	7475	7288	185	97.50

Patterns in Invented Spelling

The 2,448 invented spellings produced by the children during the two years of the study are a rich data base for exploring children's use of linguistic systems in using the orthography of English. A detailed analysis of all the invented spellings will be the subject of further work with this data base (Wilde, forthcoming). For the purposes of this report, several patterns of development that have emerged from the data will be described and exemplified. It should be noted that examples are given to illustrate a particular feature but not to suggest that any single invented spelling has a single cause. Invented spellings are the result of many linguistic systems interacting at once.

Initial Letters

Part of learning how to spell involves learning about the relationships between phonological patterns and orthographic patterns; that is, how different sound sequences are spelled. Looking at how successful children are at spelling the initial sounds of words gives a sense of how much control they have of this aspect of spelling, since the beginning letter of a word is most likely to have a relatively clear-cut relationship to the corresponding phoneme. Out of the 17,026 words written by our subjects, only 153, or 0.8%, did not begin with the correct initial letter. In Year I, there were 97 such cases, or 1.1% of all words written that year, while in Year II they had dropped to 56, or 0.7% of all words. Seventy-eight of the 153 spellings (51.0%) occurred on words beginning with vowels, although only 24% of all words used began with vowels. This reflects the fact that consonant phonemes are much more regular in their spelling than are vowel phonemes. This data shows that these third- and fourth-graders clearly control initial letter spelling almost perfectly. Looking at a few examples illustrates that even when they don't spell initial letters conventionally, they are often making plausible rather than random decisions about what letter to use first. (In these and other examples, invented spellings are listed first)

olmost/almost	gest/just
roms/arms	nife/knife
pring/bring	know/no
who/how	

The beginning vowel sound in ALMOST is usually spelled with an A before L, but is closer in most American dialects to the sound usually represented by O in words such as log and loss. The R at the beginning of ARMS may be representing the name of the letter rather than just the the consonant phoneme it usually stands for (cf. Read, 1975). P (in PRING) is related both phonetically and graphically to B. WHO begins with the same phonemes as HOW, contains the same letters, has a related meaning, and both often occur in initial sentence positions and as question markers. When G occurs before E (GEST), it is pronounced the same as J. In NIFE and KNOW, a silent letter is being dropped or added, each word following the pattern the other one should have. (KNOW is also, of course, a homophone, of "no.")

Reversals

Our data includes several invented spellings where the order of two or more letters is changed. These reversals may be one element of invented spellings that differ from the conventional ones in other ways as well, but often they are the only invented feature of a spelling:

baesball/baseball	siad/said
frineds/friends	upno/upon

It seems that in these cases the child has a good sense of the letters in a word but did not fully control the serial order.

Consonants and Long Vowels

Two kinds of orthographic patterns that are less fully controlled by third and fourth graders are consonant gemination (doubling) and long vowel spelling. In both cases, the pattern is a complex one that must be learned gradually through experience with reading and writing. There is no simple rule that tells when a consonant should be doubled or how a particular long vowel should be spelled. The children have invented spellings that go in both directions. They sometimes use a single consonant or vowel where two are needed:

stacked/attacked	dreaing/dreaming
haner/hanner	nett/neat
prety/pretty	rel/real

They also, although less frequently, do the reverse:

hiss/his	sowe/so
nett/neat	truy/try
untill/until	

Morphemic Affixes

Another important area of orthographic development at this age is the spelling of morphemic affixes like ED and ING. The child must learn to abstract these common morphemic elements from words where their representation differs phonologically, and then learn the orthographic patterns for attaching these affixes to words. In our subjects, we see invented spellings of various types related to these affixes:

Phonetic Spellings

buant/bounced
calld/called
opend/opened

Limited contol of orthographic patterns for adding affixes:

caryed/carried	freezeing/freezing
chaseing/chasing	hoped/hopped

Overgeneralizing affixes to words that don't have them:

playing/plain
roned/round aied/said

Real Words

Another important pattern of invented spellings that we observed frequently in our subjects was the use of one real word for another. Third- and fourth-graders have a considerable and increasing vocabulary

of words whose spelling they control; when one word is substituted for another it may be either an attempt to have a spelling that looks like a real word or a writing miscue (intending one word while writing another). In the case of homophones, there is, of course, likely to be a phonetic influence as well:

herd/heard	pries/prize
no/know	to/too (this occurs 35 times)
maid/made	

But even more of these spellings involve words that are similar phonetically but not identical:

bake/back	quite/quit
cake/chase	turk/truck
pound/pond	

Punctuation-related

The subjects also have invented spellings where they use or fail to use punctuation features like apostrophes, spaces, and hyphens. Writing a single word (usually a compound) as two words and vice versa is a related pattern. Examples include:

alot/a lot	bu't/but
a nother/another	cant/can't
bird's/birds	cup-cakes/cupcakes

Punctuation

Our subjects had 2,894 punctuation opportunities (i.e. places where they either used punctuation or should have) over the two-year period. In 1,467 of those instances, or 50.7%, puunctuation was used conventionally. Our subjects thus control punctuation to a far lesser extent than they do spelling.

All 6 subjects who were part of the study for two years showed an increase in percentage of conventional punctuation from Year I to Year II. Across all six children, conventional punctuation increased from 42.7% in Year I to 57.5% in Year II. The significance of the increase was found to be well beyond the .0001 level.

The primary reason that percentage of conventional punctuation increased from Year I to Year II was that omissions decreased dramatically, as shown in Table VII.

Table VII
Punctuation Categories: Years I and II (Six Subjects)

	Conventional	Omitted	Inserted	Substituted	Total
Year I	450	520	55	28	1,053
	42.7%	49.4%	5.2%	2.7%	
Year II	783	479	66	33	1,361
	57.5%	35.2%	4.8%	2.4%	

In Year I, punctuation was omitted nearly half the time, while in Year II omissions dropped to a bit more than a third of the total. The table also shows the numbers and percentages of punctuation marks inserted in inappropriate places and those that were substituted inappropriately such as a period for a question mark. Insertions and substitutions were never numerous to begin with. Although they did diminish, they did not affect the overall percentages very much.

There were opportunities for use of 7 different types of punctuation marks during the two-year period. Their patterns of use are presented in Table VIII, arranged in order of frequency.

Table VIII
Punctuation Types: Opportunities in Years I and II (6 subjects)

	Year I		Year II	
	No.	%	No.	%
Period	781	72.2%	936	67.1%
Comma	125	11.6%	217	15.6%
Quotation Mark	137	12.7%	184	13.2%
Question Mark	26	2.4%	43	3.1%
Exclamation Mark	5	0.5%	11	0.8%
Colon	3	0.3%	3	0.2%
Semicolon	4	0.4%	0	0.0%

No. = number of opportunities
% = percent of total

(The totals of all punctuation types add up to more than the totals in Table VII above since substitutions are counted under both the expected and observed punctuation type, e.g. as both a period and a comma opportunity.)

In both years, periods made up more than two-thirds of all punctuation opportunities, but in Year II the subjects were using an increasing number of text structures which required punctuation other than periods. They also showed increasing control over most types of

punctuation, as Table IX indicates:

Table IX
Conventional Punctuation: Years I and II (Six subjects)

	Year I	Year II
Period	52.1%	71.4%
Comma	16.0%	23.5%
Quotation mark	9.5%	18.5%
Question mark	11.5%	55.8%
Exclamation mark	80.0%	54.6%
Colon	0%	0%
Semicolon	0%	0%

Four of the five punctuation types used most frequently increased in conventionality of use from Year I to Year II. Since periods accounted for nearly 70% of all punctuation opportunities, the overall increase in conventionality was largely due to increasing control of periods. The only punctuation type that went down in conventionality was the exclamation point, which is perhaps more open to interpretation in its use than some of the others.

It should be noted that the increasing control of punctuation indicated by our data took place largely in the absence of formal instruction in its use. However, all teachers discussed punctuation as necessary, with individuals in conferences or with the whole class. Punctuation is clearly an important area of growth in the third and fourth grade for these subjects.

Capitalization

Our 6 case study subjects had a total of 600 capitalization problems, or 10.05 per hundred words, during Year I. This went down to 455, or 6.08 per hundred words, during Year II. (The two-year total for all 10 subjects is 1,321, or 7.76 per hundred words.) The 6 subjects, therefore, went from having approximately one capitalization problem every 10 words to having only one every 17 words. Although the 6 subjects varied quite a bit, they all showed a decrease in number of capitalization problems.

In Year I, 398, or 66.3% of the total, represent failure to capitalize letters that required capitalization, while the remainder are inappropriate capitalizations. In Year II, 371, or 81.5%, represent failure to capitalize. Much of the decrease in capitalization problems was due to fewer occurences of inappropriate capitalization (from 3.4 to 1.1 occasions per hundred words).

Capitalization problems are often a result of failing to either punctuate or capitalize at sentence boundaries but also include failure to capitalize story titles and proper nouns, as well as many

idiosyncratic capitalizations of nouns and other words.

Letter Formation

Letter formation problems are minimal for all subjects. There were 60,624 letters produced, with 200 letter formation problems (0.3% of all letters) over the two year period. All but two of the problems can be categorized as being of two major types: cursive formation of specific letters and reversals of specific letters. Fifty-nine of the problems involve reversal of lower-case manuscript B and D; the letters causing most cursive problems were lower-case M and U.

These results and further analysis which was conducted on the data suggest some conclusions concerning reversals. Reversal problems are extremely infrequent. None of the reversal problems occurs consistently over time; that is, no subject reverses all reversible letters nor does any one subject reverse any one letter on all occasions. The percentage of reversals in this data is even smaller than data reported in other literature (Frith, 1971). Most research on reversals has been done on reading and writing or copying of individual forms, letters, or words out of the context of text. The smaller number of reversals produced by our subjects and reported (for reading) in miscue analysis research (Goodman and Goodman, 1978) may be due to the context of the letter within a written text, strongly suggesting that context has an influence on the production of reversals; i.e., that letter orientation is more predictable in context.

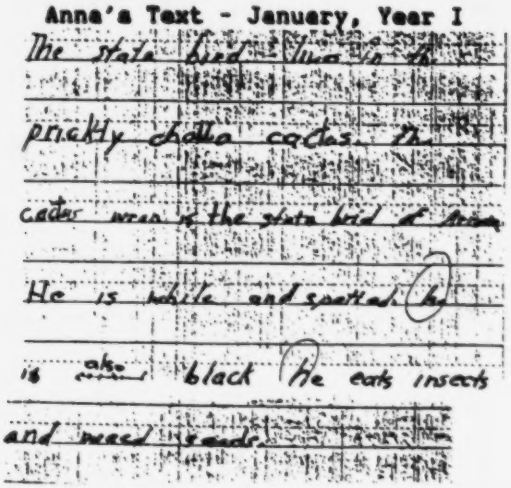
CHAPTER IV
THE CREATION OF MEANING

The creation of meaning by young writers involves complex interactions of intention, content, and form. Looking in depth at four of the children in the study - Gordon, Anna, Vincent, and Elaine - will illustrate the variety of processes that go on as writers make decisions about content and form.

Involvement and Belief Systems

Any writing episode reflects the level of involvement and ownership that the author is experiencing at the time. Two descriptions of Anna at work show how involvement can range from minimal to intense. In January of the first year of the study, two pieces, THE STATE BIRD and THE STATE SEAL, were part of a unit on the state of Arizona planned by Ms. Howard to emphasize research writing. Each student was required to do some reading in reference materials about Arizona and to then write separate expository pieces about the state flag, bird, seal, tree and flower. After reading the materials the children were to write about one of the topics in their own words, and then illustrate their writing.

Anna's Text - January, Year I



The state bird lives in the prickly chollo cactus .
The cactus wren is the state bird of Arizona .
He is white and spotted .
He is also black .
He eats insects and weed seeds .

Field notes from Anna's piece on the state bird indicate that she is not investing much of herself in this piece: Anna copies quite a lot of information from the resource material rather than generating it herself. She spends little time on the piece and then separates herself totally from the editing process by taking the piece to Ms. Manuel, the classroom aide, to edit. While the corrections are being made she dances around swinging her arms, totally uninvolved in the editing process. She then gets new paper and rewrites, incorporating

the changes Ms. Manuel has made on the first draft.

Field notes from another piece, on the state seal, again show Anna's lack of involvement. When the writing center begins, Anna has already begun the piece and has completed the first sentence: She rereads that first sentence aloud and then says to the researcher, "I don't know what to write." She talks to her seatmates, wiggles around, plays with papers in her folder, and then reads the text from the reference material on the state seal. When she tries to read her finished piece aloud to the researcher, she has difficulty with many of the words that have been copied from the reference materials.

Another piece, TUCSON, written the next year, is the longest and most sophisticated piece Anna wrote over the two years of the study. The day before she wrote the piece, two of the researchers who had worked on the writing project all year picked up Anna and the other children in the study and brought them to Tucson for an overnight visit. Anna could hardly wait to write her story. She sat down quickly, got her writing materials together and wrote this account of her adventure:

Anna's Text - April, Year II

Tucson
One day I went to Tucson to stay with some people .
We went to the Planetarium and then to the Museum of Arizona .
Then we went to the arcade .
We had lots of fun .
After that we went to Miss V house to put our clothes and sleeping bags away .
Then we went to Miss K. house to have the cookout .
M and G and V and D were swimming already .

After M was cooking the hot dogs .
Then we ate .
After that we had ice cream for dessert .
Then me and Miss V and E and K went to the Tucson Mall .
We went on the escalator and looked at the records and clothes
and Miss V bought herself something .
Then we went to the YMCA to swim .
We stopped swimming at 9:00 .
Then we went back to Miss V house and had cereal with bananas .
Then we watched a little t.v. and then went to bed .
In the morning we got ready and had cereal with bananas and strawberries and milk and donuts .
We went to go pick up those M , G , V , D and Miss K .
We met them at the University
and then we came to school .
The End

Anna didn't limit herself to easily spelled words, she kept all the events in their correct order, and she included details of what she had to eat. This composing activity was a delight to observe. She stopped only occasionally to confirm a detail with the researcher. She was driven by her message and the need to communicate it with the others in her room. It seemed that telling about her trip was almost as much fun as being there, fun that was not daunted by necessary revisions and rereadings. In this case, Anna's involvement was high

because of her interest in the topic, but involvement also appeared to be a result of social and interactional factors which were tangential to interest in the writing itself.

The influence of social and interactional factors on personal involvement in writing is also suggested by Elaine's writing of a long story about the rodeo early in the study. This story is Elaine's second longest for the year (104 words). However, the researcher observed that the length was related to Elaine's attempts to interact with and impress the researcher rather than to a particular interest in the topic. The first few times we worked with Elaine, we were using a version of the manual observation form where we numbered each word the child used; she was very aware of this and was thrilled when her word count was high, particularly if it was over 100. When the novelty of being observed had faded a little, her story length dropped off to around 50 words most days, which was more typical of her writing before the study began.

Although involvement is only one factor affecting how a piece of writing eventually turns out and is not always directly reflected in a piece's quality, in the long run a writer who is interested in what he or she is doing is going to be more successful in creating meaning. Elaine's growth as a writer during the first year of the study, which was characterized by a gradually increasing ownership of the process, makes this point particularly clear. Early in the year her focus tended to be on meeting the teacher's expectations and on surface features like spelling. When she was not particularly interested in a topic, which was often, she seemed to write just to fill up space and produced uninteresting, disjointed stories. Sometime around the tall-tale and legend units that the class did in February, this focus began to shift, as evidenced both by Elaine's greater involvement in her writing and in the more coherent nature of her stories. Although this change began when she was working in genres that she found interesting, by the end of the year she was able to take any topic and use it as a jumping-off point for a highly personal narrative; she had come a long way in taking control of an assigned topic.

The length of Elaine's stories also reflected her involvement and how she conceived of the writing process. As mentioned above, at the beginning of the study she was very excited about being observed and tried to please and impress the researchers by writing as much as possible. As she got more involved in the creation of meaning, her stories got shorter since they involved more thinking. Finally, towards the end of the year, her increased confidence and control made it possible for her to concentrate enough to write much more in the same length of time.

Another influence on how meaning is created is the writer's belief system about what the process is all about and how it works. Most of the time, these young writers were not able to articulate very sophisticated notions about how the process works. To Gordon, writing is a fairly straightforward, uncomplicated matter: "I just sit there, and then I think and then I write it." This is reflected in his

composing behavior; he never agonized over what to write about but just plunged right in. Similarly, Anna described what she did but without a conscious sense of how she did it:

> Anna: First I look at the pictures on the board and see what I'm going to write about. Then I start writing about that picture.
>
> Researcher: What do you do when you want to end it?
>
> Anna: I just put an ending, like put "The End" or something.

Nothing in what she said had anything to do with creating stories that made sense, yet that is what was most important to Anna.

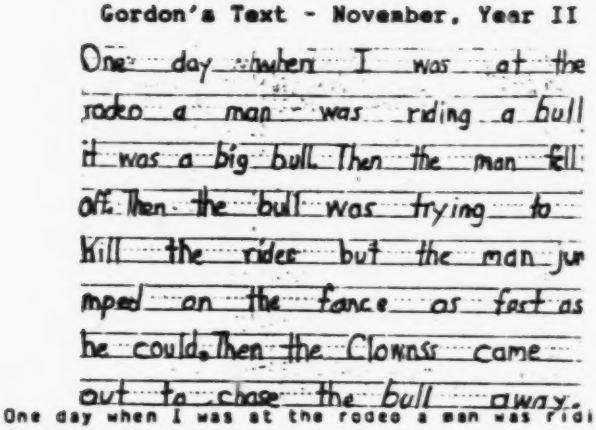
These examples of how the children talked about the writing process suggest that much of their knowledge about that process may be unexamined: what they can do outstrips what they can articulate. Some development is apparent over time. For instance, Gordon, in the second year of the study, showed that he was beginning to take a slightly broader perspective on each piece of writing. In October, he described the way he begins a story as, "Sometimes I always put 'one day'"; to end a story, "I put a period...and if I don't feel like writing any more I can just write 'the ending'". By April he said that the first thing he does is to think of a title, and that the last thing he does is to "read it over and see if it makes sense." These comments don't necessarily reflect a change in his actual behavior, but they do suggest that he may have begun thinking of a story more holistically and less as a linear string.

Topic Choice and Development

Gordon, in an interview, suggested that a writer's themes may be influenced by the scope of his or her world and interests. When asked if he'll write different kinds of stories when he's older (in sixth grade), he said he'll write about buildings and skyscrapers then, and that when he was in first grade he wrote about sheep and plants. When asked what he writes about currently, he replied "interesting stuff".

The scope of the "interesting stuff" found in these children's writings reflects the scope of their lives and culture. Bird (1984) has looked at such information in these children's compositions in great depth. First of all, they sometimes wrote about topics that are specifically identifiable as being part of Papago culture. A rodeo and carnival are major annual events in the Papago community and many of the children wrote about them, as Gordon did in this story:

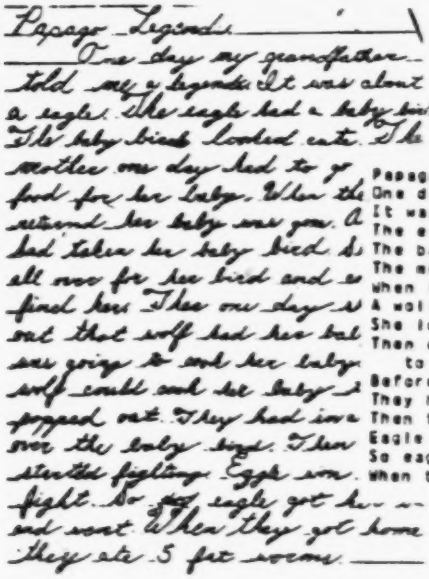
Gordon's Text - November, Year II


One day when I was at the
rodeo a man was riding a bull
it was a big bull Then the man fell
off Then the bull was trying to
kill the rider but the man jum
ped on the fence as fast as
he could. Then the Clowns came
out to chase the bull away.

One day when I was at the rodeo a man was riding a bull
It was a big bull .
Then the man fell off .
Then the bull was trying to kill the rider
but the man jumped on the fence as fast as he could .
Then the clowns came out to chase the bull away .

These stories sometimes described events the children had experienced directly; in other cases they drew on the oral narrative tradition of Papago culture, as in Dana's legend about the wolf and the eagle:

Dana's Text - January, Year II


Papago Legends
One day my grandfather
told me a legend. It was about
a eagle. The eagle had a baby bird
The baby birds looked cute. The
mother one day had to go
food for her baby. When the
return her baby was gone. A
had taken her baby bird. S
all over for her bird and c
find her. Then one day s
out that wolf had her bab
was going to cook her baby
wolf could cook her baby
popped out. They had in
over the baby bird. Then
started fighting. Eagle won
fight. So the eagle got he
and went. When they got home
they ate 5 fat worms

Papago Legends .
One day my grandfather told me a legend .
It was about a eagle .
The eagle had a baby bird .
The baby bird looked cute .
The mother one day had to go get some food for her baby .
When the mother returnd her baby was gone .
A wolf had taken her baby bird .
She looked all over for her bird and couldn't find her .
Then one day she found out that wolf had her baby and was going
to cook her baby .
Before wolf could cook her baby the eagle popped out .
They had in argument over the baby bird .
Then they started fighting .
Eagle won the fight .
So eagle got her baby and went .
When they got home they ate 5 fat worms .

Vincent, who usually was uninterested in classroom writing topics and wrote only with reluctance, had one of his best experiences with writing when he had a chance to use it to explore an aspect of his culture that meant a great deal to him. During February of the second year of the study, his class was writing stories about the Southwest for an area writing conference. Vincent, proud and aware of his Papago culture, found something he cared to write about. For several weeks, his writing became deeply personal and even emotional. It was at this point, in several long dialogues with one of the researchers, that Vincent expressed his deep-felt desire to become a medicine man for his tribe when he grew up, telling about visits to his home by medicine men.

Field notes from the period when Vincent was writing this piece suggest how the process of meaning creation involves not just knowing what you want to say but also deciding how to organize your thoughts into written form. Vincent had prepared for the assignment by talking with his family and other tribal members. He started writing (WHEN I GROW UP I WANT TO BE A MEDICINE MAN) but then appeared stuck. "I'm trying to think how to make it into a story," Vincent said aloud. He changed one letter and then said "I don't know what else to write." The researcher suggested that Vincent could write about some of the things that he had discussed with his mother. Vincent answered, "But I don't know how to make it into the story," and then decided to begin all over again. Another one of his comments suggests an interesting relationship between culture and audience. Since the piece was being written for a Young Authors' conference, the researcher brought up Vincent's intended audience. She suggested that many people might not know about medicine men, and that he could write to inform his audience. He replied, "But who wouldn't know about medicine men?," suggesting that his concept of audience does not yet include a sense of those whose cultural and knowledge base differ from his own. In the end, his piece reflects both what he had learned from others about becoming a medicine man and his own feelings about it; the creation of meaning here serves both expository and expressive purposes.

Some day I would like to become a medicine man just like some of my uncles are. I wish I was one right now. But I have to know a lot of stuff before I can become a medicine man. I have to know how to sing in Papago and know how to talk to the ghosts and know when they are coming and when they are here. Only if I knew how to become a medicine man. The End.

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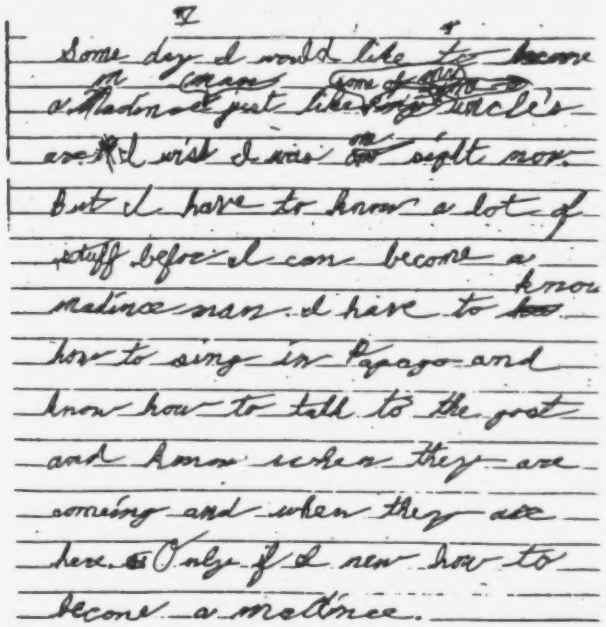
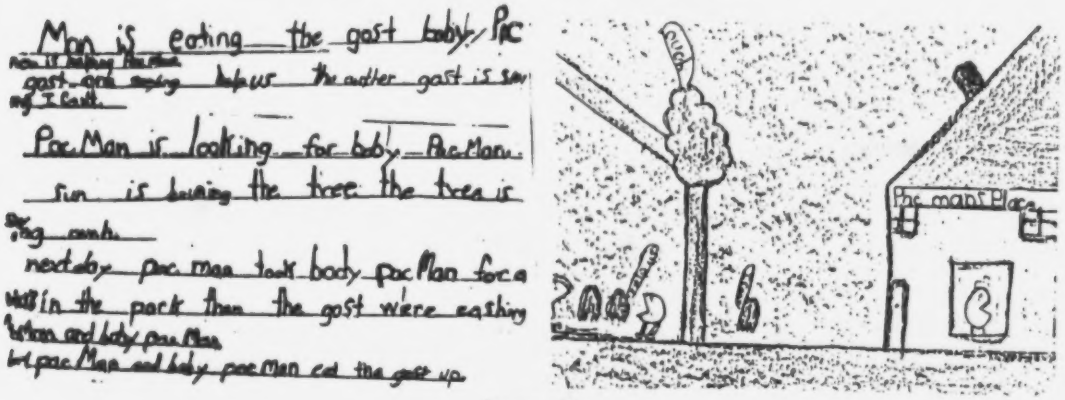
Vincent's Text - February, Year II


Some day I would like to become a Medince man just like my uncle's are. I wish I was eight now. But I have to know a lot of stuff before I can become a medince man. I have to know how to sing in Papago and know how to talk to the gost and know when they are coming and when they are here. Only if I new how to become a medince.

One might assume that for Papago children to write about their culture would mean primarily writing about legends, the desert, and other aspects of their Native American culture. But their culture also includes Pac-Man, Peanuts, and Pink Floyd, all the elements of a more general North American third and fourth-grade culture. It is only to the outsider that these two sets of influences are so separate; for children, their culture is for the most part a seamless whole.

These children therefore also have images and ideas from popular culture in their mental storehouse, and write pieces reflecting and recombining them. Gordon's story about Pac-Man is one of many that were written by the children when the Pac-Man television program had just begun.

Gordon's Text - October, Year II


Man is eating the gost baby Pac Man is helping Pac Man gost. one saying help us the other gost is saying I can't.

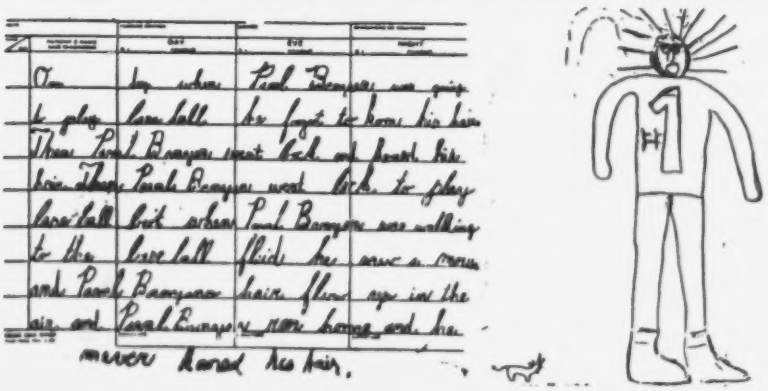
Pac Man is looking for baby Pac Man. sun is burning the trees the trees is burning comb.

next day pac man look body pac Man for a walk in the park then the gost were eating Pac Man and baby pac Man but pac Man and baby pac Man eat the gost up.

Pac Man is eating the ghost .
Baby Pac Man is helping Pac Man .
The ghosts are saying , " Help us . "
The other ghost is saying , " I can't . "
Mrs. Pac Man is looking for Baby Pac Man .
The sun is burning the tree .
The tree is saying , " Ouch . "
The next day Pac Man took Baby Pac Man for a walk in the park .
Then the ghosts were chasing Pac Man and Baby Pac Man .
But Pac Man and Baby Pac Man ate the ghosts up .

Young writers also create meaning out of the classroom culture which surrounds them, a culture which includes not only instruction but children's literature and other physical resources, as well as the other children in the classroom. When the students were writing on topics of their own choice, a story idea thought up by one student would often be picked up by others sitting nearby and occasionally by the whole classroom, so that there was sometimes a whole spate of stories about the desert or E.T. If a wide variety of stimuli are available in the classroom, children will pick up on possible story elements and rework them in their own ways, as Gordon did with a Paul Bunyan story. He decided he was going to draw and write about Paul Bunyan being scared by a mouse. This Paul Bunyan story was different from the traditional ones; he's not a giant logger but a man in jeans and a baseball shirt who gets scared by a mouse. Gordon's teacher mentioned that the part about the mouse may have come from a story they read as a class, but that the baseball part was original. Gordon liked this story a lot, because of the humor of the hair flying up.

Gordon's Text & Picture - February, Year II



One day when Paul Bunyan was going to play baseball , he forgot to
comb his hair .
Then Paul Bunyan went back and combed his hair .
Then Paul Bunyan went back to play baseball .
But when Paul Bunyan was walking to the baseball field , he saw
a mouse ,
and Paul Bunyan's hair flew up in the air .
And Paul Bunyan ran home
and he never combed his hair .

Another important source of what children decide to write about is their own idiosyncracies and personal interests. Elaine, for instance,

often wrote stories where she ended up in the hospital. In a circus story, she was riding on an elephant, fell off, and went to the hospital. A piece about bicycle safety turned into a story of how she crashed and had to go in the hospital because she broke her leg and had "lots of scratches, too." In a third story, she and a friend were driving to town, got the sun in their eyes, and crashed; after the police and ambulance came they ended up in the usual place. In real life Elaine is not particularly accident-prone, but crashes and hospitals are obviously on her mind a lot.

Gordon often chose to write about religious themes; one day after being scolded on the playground he came in quite upset and proceeded to do a very somber story and picture about Jesus dying on the cross. Another day, he created an unusual juxtaposition of ideas by writing about an avalanche in Bethlehem, with Jesus serving as a kind of superhero. When asked how he got the idea, he said that he had first thought of just writing an avalanche story but then got the idea of making it religious: "I was going to write a regular story, and then I thought about Jesus and Mary, and I just writed 'an avalanche,' and then I wrote it in Bethlehem."

Bird (1984) has concluded that children's personal experiences almost always find their way into their written texts. Two of Anna's stories illustrate this. She wrote a story in December of Year 1 based on an assigned topic, about a Christmas elf who gets hurt, is rushed to the hospital, and mysteriously dies. Anna's mother indicated that Anna's grandfather had been taken to the hospital and died about the same time that Anna wrote this story. In February, when the children were assigned the topic of fairy tales, Anna wrote a story about a queen who was poisoned when something was added to her food. Anna said she got the idea for her story from an incident that morning in the cafeteria when some students surreptitiously put salt in others' food.

It is important to realize that personal content in writing emerges spontaneously; if students are asked to do an activity like journal-writing but not given the opportunity to develop their own purposes for doing it, it will be as constraining as any other assignment, as Vincent demonstrated when he was told to write "a journal entry." Journals had not been used in the classroom since the beginning of the year, and Vincent did not understand what the teacher wanted. He was up and down in his seat three or four times getting the right kind of paper, sharpening his pencil, and asking his teacher a question. He finally sat down, commenting, "I don't know what to write about. How do you write in a journal?" Then, half out of his seat, he used his pencil to tap the shoulder of the girl sitting next to him, and repeated his question: "How do you write in a journal?" "I don't know," the classmate replied emphatically, wincing from the uncomfortable tap on her arm. The researcher then suggested to Vincent that the journal can be about something that has happened in one's life or something that is going to happen. Vincent made no response as he continued to squirm and to change from a seated to a kneeling pose in his chair every few seconds. This incident, which is full of frustration, off-task behavior and very little writing, involves a

student who is somewhat angry because he doesn't understand the teacher's expectation.

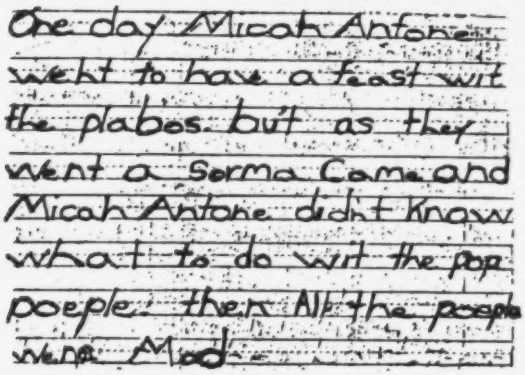
Assignments

In many classrooms, assignments are an important part of determining what children write about. The children in this study wrote both in response to assignments and without them. Although Graves found in a previous study (1975) that unassigned pieces are longer and that "an environment that requires large amounts of assigned writing inhibits the range, content, and amount of writing done by children" (p. 235), we saw a more complex pattern. In Ms. Howard's classroom, which included all the subjects during the first year of the study, most writing was at least partially assigned; the curriculum was structured around thematic units, with students usually choosing topics from an assigned list of ideas, pictures, or story-starters. Her classroom therefore provided an extensive picture of how children respond to assignments. An assignment definitely imposes constraints on a young writer, but in a way that is modified by the extent to which the writer accepts the constraints and the teacher insists on them. Over and over again, these children demonstrated how they are the ones who choose (consciously or not) whether an assignment will be the major determiner of what a piece of writing will look like, merely a jumping-off point, or something in between. These choices were determined by differences between the students, including their proficiency as writers, their interest in pleasing their teacher, and their interest in a particular topic (Bird, 1984).

Some assignments were difficult for all the children, although some children were more successful with them than others. In November, Ms. Howard asked the students to write imaginary diaries of child pilgrims on the Mayflower. The intent was to produce a collaborative effort, with all of the boys writing in a single male persona for different dates and all of the girls in a female persona, so that the final product would be several diary pages for each character. The class chose a boy's name and a girl's name for these characters. The boy's name chosen was Micah Antone, which is a plausible name in the Papago community but not, of course, a typical name on the Mayflower. Ms. Howard spent quite a bit of time discussing the assignment with the class. She stressed writing in the first person and writing about things that might really have happened, and elicited ideas from them about what it might have been like on the Mayflower. Gordon wrote the following piece:

> One day Micah Antone went to have a feast with the Pueblos .
> But as they went a storm came
> and Micah Antone didn't know what to do with the people .
> Then all the people were mad .

Gordon's Text - November, Year I


One day Micah Antone
wekt to have a feast wit
the plabes. but as they
went a Serma Came and
Micah Antone didn't Knaw
what to do wit the pop
poeple. then All the poeple
was Mad

Gordon's product was a mixture of his teacher's and his own intentions. Like every child we observed working on this assignment, he wrote about his pilgrim character in the third person rather than the first. He incorporated the fact that the pilgrims had a feast with Native Americans (although not Pueblos, who are a Southwestern tribe), and that they faced storms at sea, and ended up with the beginning of what could have been an adventure narrative. This assignment was a difficult one for all the children, and Gordon dealt with it better than most, in the sense that he was able to produce a piece with some of the elements his teacher had been looking for.

Another child in the class, writing in the female's persona, produced a longer text but one which is far less what Ms. Howard had in mind.

Diana's Text - November, Year I

Mary Johnson was nice to her children.
They play on the Mayflower.
She let them do what they wanted to do.
Sometimes she was mean to her children and didn't let them play because they were nice.
So she doesn't let them play with their friends.
Their friends come to her house but Mary said that they couldn't play with her friends but sometime they could play on the Mayflower.

In this case, the teacher-intended story of a child pilgrim named Mary Johnson has become a story of how mothers treat their children, with the Mayflower serving like a giant playground. Mary Johnson becomes the mother and the pronoun references show Diana's inconsistency in keeping the teacher's characters and her own characters straight.

A writer who follows an assignment closely is not necessarily more accomplished than one who doesn't. At the beginning of her year in Ms. Howard's class, Elaine was very concerned with trying to please her teacher, and stayed close to the assigned topic, but later in the year she was writing more for herself. Four of her stories from March through May were written as part of four very different curriculum

units, in response to assignments in all cases, but are very similar in that they all deal with imagined experiences from her own life. In a story about the circus and one about "riding safe" on her bicycle, she had accidents and went to the hospital. In a report about Egypt, the country looked remarkably like Tucson, with motels, zoos, toy stores, and ice cream cones. Saturn, in another piece, was different from home, with red sky and round-headed people, but Elaine stayed there with her friend, May, and watched cartoons. In all four of these texts the teacher-selected topic makes an appearance briefly but then Elaine's desire for self-expression takes over. This may be seen as a reflection of her growing independence as a writer - she is able to use a story-starter as a jumping-off place but is not particularly constrained by it; she writes based on what she wants to say rather than being particularly concerned with the teacher's or the story-starter's intentions.

It is important to consider the role of the teacher in this process. The children who are best able to handle the constraints of assignments are those who take control of the process and decide how much they will let themselves be influenced by the assignment. Often a single child will over time exhibit a range of choices, from paying only minimal attention to the assignment to trying to produce just what's expected. Ms. Howard allowed this to happen. Although she was sometimes disappointed when the stories produced by the children in response to an assignment didn't live up to her expectations she rarely pressured them to change their work to fit those expectations.

Genre and Style

Along with deciding what to say, writing involves choices about how to say it; meaning is always created in some form. These young writers explored a variety of genres and stylistic elements as part of their development.

A Variety of Genres

The vast majority of writing done during the two years of the study took the form of stories. These may be purely imaginative like Gordon's Pac-Man story, fictionalized personal narrative like Elaine often wrote, or true personal episodes, like Anne's story of her trip to Tucson. When the children attempted other genres, the impetus usually came from the teacher. Expository writing was more difficult for the students. Ms. Howard's unit on the State of Arizona is an example of this. Her goal was for the students to write research papers, and she spent a good deal of time talking with them about how to use reference books and what form their pieces should take. However, this form of expository writing was still too difficult or unfamiliar for some of the children. Mary's piece about the state bird is a classic example.

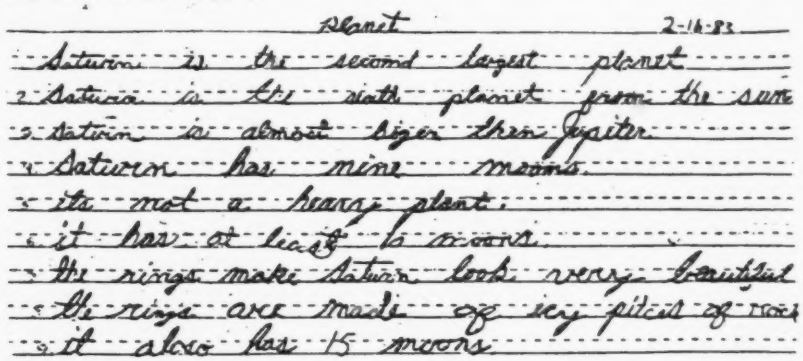
Mary's Text, Year I

One day the state bird is going to get a worm.
He's going to eat the worm.
And he wants to get some more of the same worm.
And he's going to eat lots of it, lots of the worm.
He likes worms.

Some expository writing, however, was more successful. Ms. Caldwell did not plan a research unit for her class but encouraged this type of writing when a good opportunity for it occurred spontaneously. A period of expository writing came about as the result of one child's request for the teacher to help him find something to write about. She suggested he try factual writing so he wrote a report on a particular breed of dog he was interested in. When he shared his writing with the class, everyone wanted to do reports. Anna chose to do hers about the planet Saturn.

Anna's Text - February, Year 2

Planet
1.
Saturn is the second largest planet .
2.
Saturn is the sixth planet from the sun .
3.
Saturn is almost bigger than Jupiter .
4.
Saturn has nine moons .
5.
It's not a heavy planet .
6.
It has at least 10 moons .
7.
The rings make Saturn look very beautiful .
8
The rings are made of icy pieces of rock .
9.
It also has 15 moons .


Planet 2-16-83
Saturn is the second largest planet
2 Saturn is the sixth planet from the sun
3 Saturn is almost bigger than Jupiter
4 Saturn has nine moons
5 its not a heavy planet
6 it has at least 10 moons
7 the rings make Saturn look very beautiful
8 the rings are made of icy pices of rock
9 it also has 15 moons

She began with consulting a World Book encyclopedia, wrote a bit, looked back at the encyclopedia, stopped to think a minute, and then made a comment to the researcher about not knowing what to do next. The researcher and Anna talked about the options available and Anna decided to read through the whole encyclopedia article. The text of the encyclopedia was difficult for her; she finally gave up on this resource and got another book, which was even more difficult. She put

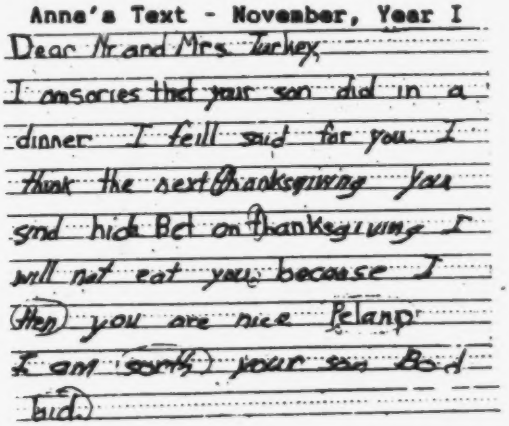
it away and got a book about space from another student. She found a sentence she wanted to include in her text and began to copy it. The remainder of the composing episode continued in the same vein.

During this interchange of moving from one resource to another and atill another, an interesting event occurred. Anna noticed that three different sources disagreed about the number of Saturn's moons. At first, she concluded that the first source was the correct one, but when the researcher asked her why, she couldn't explain her reasoning. Then when she found the third source that said Saturn has fifteen moons, she decided it must be right because "it has the most." She tried to get her teacher's attention so she could ask about the moons but Ms. Caldwell was busy. The question was left unresolved, as the final product indicates.

Although she was a novice expository writer, Anna learned something about the process: that it can involve drawing information from a variety of sources, which may not always agree. It should be noted, however, that her usual practice (which was typical of all the children) was to copy directly from the source material rather than reading, reflecting, and writing down her own ideas. It was only when prompted that she used more sophisticated strategies such as reading a whole article before writing what she'd learned from it, and trying to evaluate discrepancies between sources. Although these children have a long way to go before they can produce polished expository pieces, it seems valuable to let children experiment with the form as well as to read more expository materials. It is important that teachers help children develop functions for expository writing and to provide many realistic opportunities to write reports and other types of factual information.

Students also occasionally wrote pieces in a variety of other genres. Letters were of various types, as these 3 examples show:

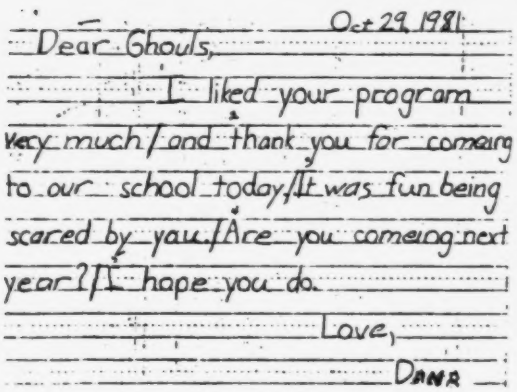
Anna's Text - November, Year I


Dear Mr and Mrs Turkey
I onsories that your son did in a
dinner I feill sad for you I
think the next Thanksgiving you
gnd hide But on Thanksgiving I
will not eat you because I
(then) you are nice Pelanp
I am sorry your son Bod
bid.)

Dear Mr. and Mrs. Turkey .
I am sorry that your son died in a dinner .
I felt sad for you .
I think the next Thanksgiving you should hide .
But on Thanksgiving I will not eat you because I think you are nice people .
I am sorry your son Bob died .

Page 45

Dana's Text - October, Year I



Oct 29 1981

Dear Ghouls,

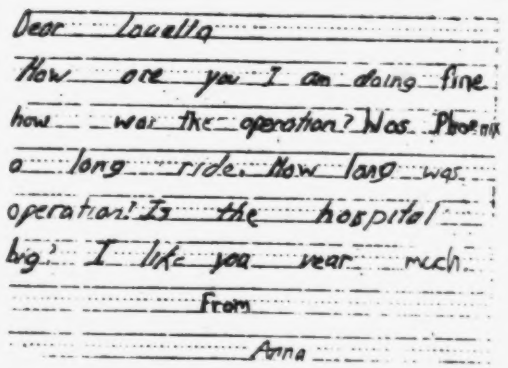
I liked your program very much and thank you for coming to our school today. It was fun being scared by you. Are you coming next year? I hope you do.

Love,

DANA

Oct. 29 , 1981 Dear Ghouls ,
I liked your program very much
and thank you for coming to our school today .
It was fun being scared by you .
Are you coming next year ?
I hope you do .
Love ,
DANA

Anna's Text - April, Year I



Dear Louella

How are you I am doing fine. how was the operation? Was Phoenix a long ride. How long was operation? Is the hospital big? I like you vear much.

From

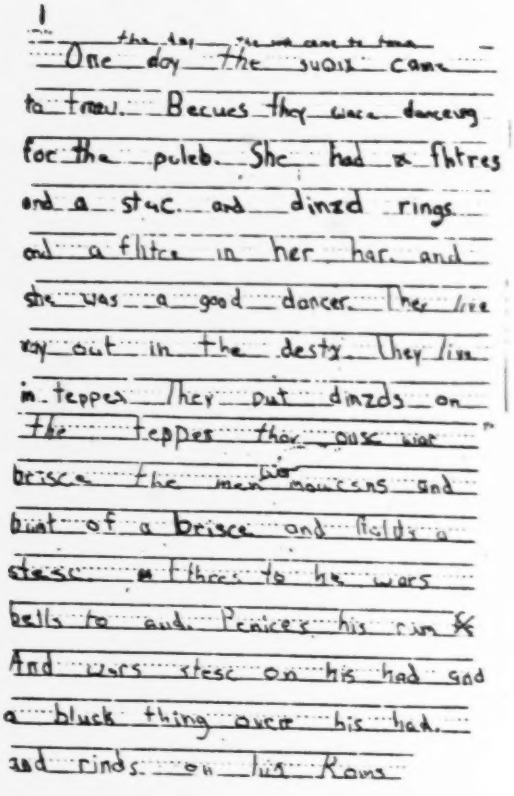
Anna

Dear Louella ,
How are you ?
I am doing fine .
How was the operation ?
Was Phoenix a long ride ?
How long was the operation ?
Is the hospital big ?
I like you very much .
From Anna.

Anna's first letter is a "fictional" one, while Dana's is a real one, written to another class who had put on a Halloween presentation. These were both assigned, but children also occasionally wrote spontaneous letters, like Anna's second one, written to Louella, a classroom aide who was in the hospital. In the second year of the study, Ms. Pagett arranged for her class to have penpals in another part of the state, which provided an opportunity to write real letters, but to someone they had never met.

Writing which described something originally seen in another medium appeared from time to time. Elaine's favorite piece of writing is one where she was working from a picture.

Elaine's Text - January, Year II (first 2 pages)
and Picture Stimulus



One day the Sioux came to town. Becues they were dancing for the puleb. She had a fhtres and a stuc. and dinzd rings and a fhtre in her har. and she was a good dancer. Ther live way out in the desty. They live in teppes. They put dinzds on the teppes. they ouse wer brisc. the men wer mocsens and bust of a brisc. and holds a stesc. a fthres to he wers bells to and. Penices his rim & And wers stesc on his had and a bluck thing ovce his had. and rinds on his Rams

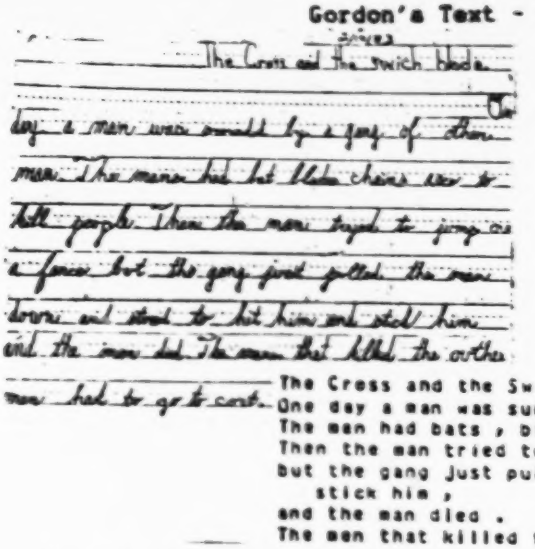
The Day the Sioux Came to Town
One day the Sioux came to town because they were dancing for the people .
She had feathers and a stick and design rings and a feather in her hair ,
and she was a good dancer .
They live way out in the desert .
They live in tepees .
They put designs on the tepees .
They always wear dresses .
The men wear moccasins and the bottom of a dress and hold a stick .
Feathers , too .
He wears bells , too , and paints his arms , and wears sticks on his head and a black thing over his head , and ribbons on his arms .

She began this piece about the Sioux dancers as a story but was very quickly caught up in the excitement of trying to describe the picture in as detailed a manner as possible. Because she was attempting this genre for the first time, there are some cohesion problems resulting from exophoric reference, and the piece doesn't have any particular internal logic, since she wrote about aspects of the picture as they struck her eye.

In Ms. Pagett's class, the children occasionally watched short films in class and then wrote about them; children in all three classrooms also wrote about movies they'd seen outside of school, such

as Gordon's retelling of "The Cross and the Switchblade":

Gordon's Text - February, Year II



The Cross and the Switchblade .
One day a man was surrounded by a gang of other men .
The men had bats , blades , chains and axes to kill people .
Then the man tried to jump over a fence ,
but the gang just pulled the man down and started to hit him and stick him ,
and the man died .
The men that killed the other man had to go to court .

This kind of writing makes special demands; the writer must communicate the experience of the picture, film, or other content to a reader who is not necessarily familiar with it. When the writer's sense of audience is not well developed, as in Elaine's case, lack of cohesion due to ellipsis and exophoric references may result. Again, greater proficiency in the genre will come about through experiences with it and through appropriate teacher guidance.

A genre that emerged only once during the study was poetry; Ms. Howard spent most of one week's writing time having her class write haiku, a Japanese verse form often used in elementary school writing because of its apparent simplicity. Elaine's experience with it suggests some of the issues involved when children are asked to write in unfamiliar genres.

On March 25, Elaine attempted a haiku, which was a very different kind of writing from any she'd done previously. Two days before, Ms. Howard had told the class about what a haiku is and they had written one together. The elements that she stressed in her instruction were: the 5/7/5 syllable pattern of the haiku; nature as the usual subject matter for haiku; and poetry as being made up of word pictures that aren't necessarily complete sentences. She also gave the students a handout summarizing these points and others.

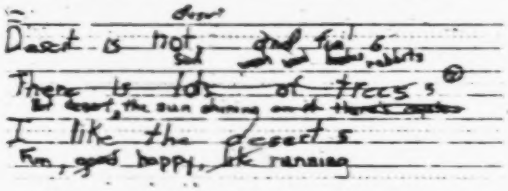
On the day that we observed Elaine, the children were asked to write individual haikus. She chose to write about the desert and was quite absorbed in the task and intrigued by the genre, clapping out syllables as she went in order to fit into the haiku form. Her first version read as follows:(The numbers at the ends of the lines are the syllable counts that Ms. Howard had asked them to include.)

Desert is hotd and fall 5
there is losted of treas 7
I like the desert 5

She was quite pleased with it. Since she had miscounted the syllables and thought she had produced a 5/7/5 pattern, the researcher pointed this out to see how she'd react. When she realized she'd actually produced a 6/5/5 pattern, she chose to leave the poem as it was, but did change the numbers to reflect the actual syllable count. She then asked the researcher to edit with her; she liked the content but wanted help with capitalization and spelling. With the researcher's help she capitalized the beginning of each line and corrected the spelling of HOT, FUN, and LOTS.

At this point Ms. Howard chose to come over to work with Elaine. She began to suggest changes so that the haiku would be more descriptive and picturesque and have the correct syllable count. She asked questions such as, "What makes the desert hot? What makes it fun?", and wrote parts of Elaine's answers on her paper. She told Elaine that in a poem you write pictures rather than sentences and at some points had her close her eyes to picture the desert better. When they had generated a number of images, Ms. Howard worked with Elaine to cut down the number of syllables in each line. At the end of this session, Elaine's paper looked like this:

Elaine's Text - March, Year 1



The final version of the haiku, which Elaine was to copy over, read:

Desert is hot, fun.
Hot desert, the sun shining.
Fun, happy, running.

This is a much closer fit to Ms. Howard's idea of what a haiku is, but Elaine preferred her original version. Throughout the first year of the study, Elaine had gradually assumed a greater sense of control over her writing, but on this occasion she couldn't retain the ownership she'd clearly felt in relation to her first draft. The piece that resulted was in a sense more Ms. Howard's writing than Elaine's.

The problems that arose here are not because of the unfamiliar genre itself; Elaine was in fact quite captivated by the chance to experiment with this new form. The difficulty came when more emphasis was put on the haiku form itself than on the expression of the child who wrote it. This episode suggests a useful general touchstone for exploring varied genres with children as they write: even young elementary school children are capable of writing in a wide variety of prosodic and poetic forms, and indeed are likely to enjoy doing so, but

they must always be allowed to use the form in a way that is comfortable for them. They need many opportunities to explore different genres, and the child must always retain both interest and ownership in the piece.

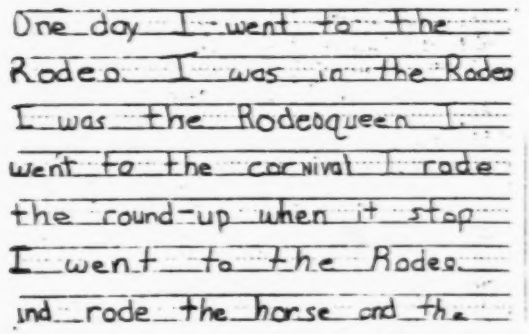
Stylistic Choices

These young writers explored a number of stylistic options as they wrote. The choices they made suggest that they are involved in a process of playing with a variety of stylistic forms and of gaining increasing knowledge and control of how written language works. Some statements about what we have seen in these children's writing suggest the diversity of learning involved.

1. Children used both reality and fantasy in their writing

A piece of Elaine's is a nice illustration of the blend of reality and fantasy that is typical of her stories.

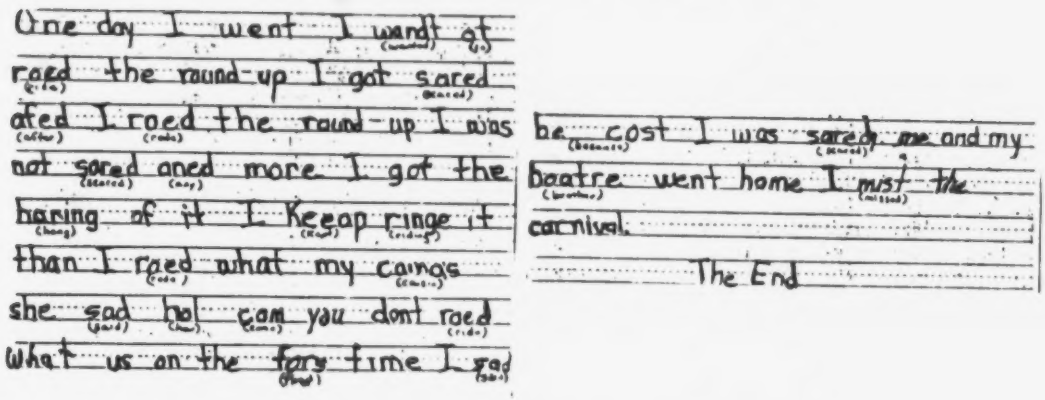
Elaine's Text - November, Year II


One day I went to the
Rodeo I was in the Rodeo
I was the Rodeoqueen I
went to the carnival I rode
the round-up when it stop
I went to the Rodeo
and rode the horse and the
Rodeo was starting.

One day I went to the Rodeo .
I was in the Rodeo .
I was the Rodeo Queen .
I went to the carnival .
I rode the round-up .
When it stopped I went to the Rodeo and rode the horse ,
and the Rodeo was starting .

She almost certainly did go to the rodeo and carnival and ride in the round-up, but was not the rodeo queen or a rider in the rodeo. In most cases, only knowledge of Elaine's life, not the story itself, lets the reader know how much of a story is true (Bird, 1984). Interestingly, the one story she wrote that was entirely based on her real life, which was about being afraid of going on a ride called the "round-up," is the most unified of her pieces, perhaps because its scope is defined by the logic of the incident rather than the range of her imagination.

Elaine's Text - November, Year II


One day I went I wandt at
raed the round-up I got sared
afed I roed the round-up I was
not sored aned more I got the
haring of it I Keeap ringe it
than I raed what my cousns
she sad ho com you dont raed
What us on the fors time I rad
be cost I was sared me and my
boatre went home I must the
carnival.
The End

One day I wanted to ride the round-up .
I got scared .
After I rode tne round-up I was not scared anymore .
I got the nang of it .
I kept riding it .
Then I rode with my cousin .
She said , " How come you didn't ride with us on the first time ? "
I said , " Because I was scared . "
Me and my brother went home .
I missed the carnival .

Elaine also stated in her interview dealing with this group of stories that this one was her favorite because "it's true...It's not fun if they're not true." She mentioned that it was the first factual story she'd written.

Anne wrote realistic stories sometimes and fantasy at other times. When assigned to write an outer space story in Year I, Anne manipulated the topic to suit herself. She didn't really write a space story but instead wrote about a realistic phenomenon which may have happened to her personally, that of waking up and not knowing where she was. During Year II, Anne wrote many stories growing out of real events such as the Arizona State Fair and trips to Tucson and Rocky Point, Mexico. Anne indicated she likes to make her readers laugh or show surprise when they read or listen to her pieces, which led her to write more imaginative pieces on occasion. She especially liked a piece about winning a lottery because she felt it was exciting to win money and go to places like Hawaii and Mexico. It is here we see the dreamer in Anne.

Gordon tended to write more fantasy than realism, though his fantasies often began in a realistic situation. In his story in November of Year II (shown earlier, p. 12), he began with a real incident and extrapolated from it to the supernatural.

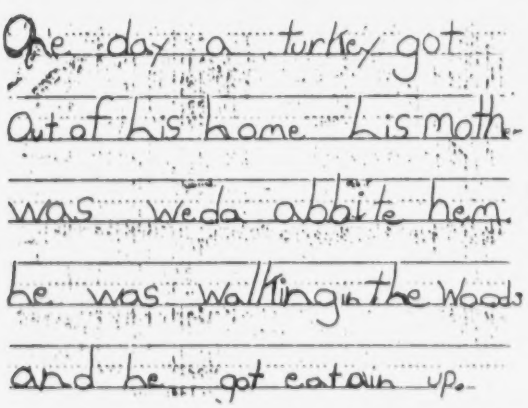
Gordon described how he got the idea for the story: "When my father took me to a football game I just decided to write about it and the monster." He then added that in real life it wasn't at all scary when he came home from the football game, and he didn't see any

monsters. His teacher commented on the way it begins with a realistic incident of being hit on the head with a rock and then goes in the direction of fantasy. She appreciated the plot twist, the way it "could be taken from <a real> incident and then changed into a creative figure." It is typical of Gordon to start a story in a low-key uneventful way in order to set a scene and provide a context for his imagination to work on. His ideas often came not before he began to write but during the process of writing, so that a beginning drawn from real life may have been the easiest way to get the process in motion. Every once in a while, he wrote a more realistic story such as the one about the bull-rider at the rodeo (shown earlier, p. 36).It isn't known if Gordon based this story directly on an incident he saw or not, but he certainly could have. His teacher commented "it's less imaginative than some of his others," because "it's usually what happens at the rodeo...It could be almost factual." Gordon's plot structure has a clear, interesting sequence of events, which Gordon recognized himself when discussing this story in an interview. He said it's a good story because the rider jumps on the fence "so he could be safe," and because "it also has the clowns in it, chasing the bull away." Perhaps when Gordon is writing a story based on real events, he can structure the plot more tightly since he already knows more specifically what the sequence of events is going to be.

2. Children had a good sense of the beginning, middle, and end of stories

Fairly consistently throughout the study, the children wrote stories with a clear sense of a beginning, middle, and end. Gordon, for instance, was able to write about a large variety of topics and to maintain a strong story sense through them all. Ms. Caldwell commented that he "seems to have a story line right from the beginning <of the year>," and that he usually sticks to one topic: "He doesn't seem to just go to one thing and then skip and then come back like some kids do." This is even seen in one of his earliest pieces.

Gordon's Text - November, Year I



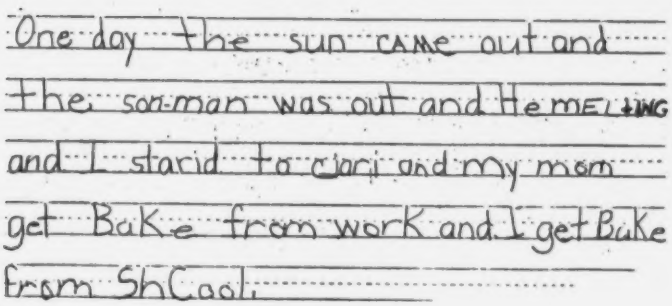
One day a turkey got out of his home. His mother was worried about him. He was walking in the woods and he got eaten up.

This is a very short and simple story but has an obvious beginning,

middle, and end, showing that Gordon had a sense of story right from the beginning of the study. Although many of his stories don't have a real ending, this usually appeared to be due to lack of time rather than to his lacking a sense of how plots develop.

Elaine, by contrast, writes stories that are somewhat less tightly structured. For instance, a snowman story she wrote in Year I changes from a third-person narrative to a first-person one about herself.

Elaine's Text - December, Year I

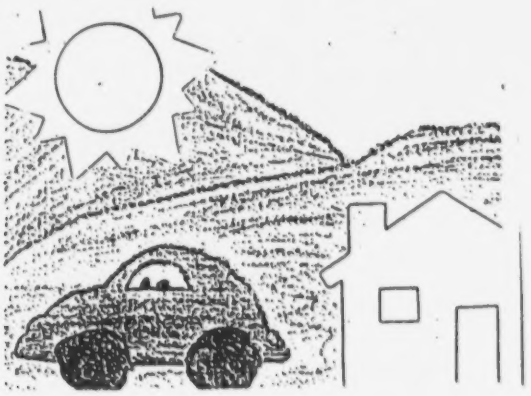

One day the sun came out and
the snowman was out and he MELTING
and I stard to cori and my mom
get BaKe from worK and I get BaKe
from ShCool.

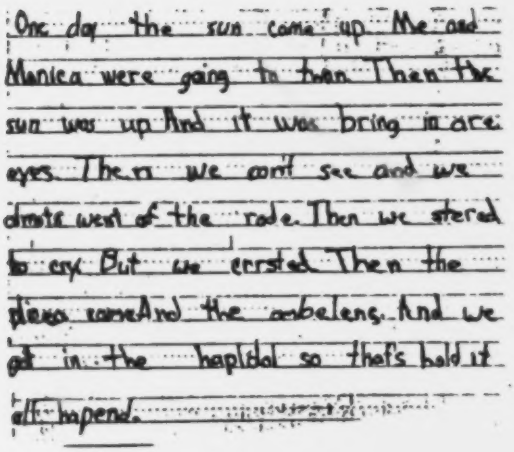
One day the sun came out
and the snowman was out .
And he melted .
And I started to cry
and my mom got back from work .
And I got back from school .

The sentence "I started to cry" is a bridge between the first part about the snowman and the second part, which is a piece of a "day-in-the-life"-type narrative.

However, Elaine gained greater control of this aspect of story structure over the course of the study. By April 7 of Year II, she was able to use a very simple picture as a starting point to develop a strongly plotted story; her sense of story structure is shown by her final sentence, "So that's how it all happened."

Elaine's Text - April, Year II




One day the sun came up Me and Monica were going to town Then the sun was up And it was bring in are eyes Then we cant see and we almste went of the rode. Then we stered to cry But we cerstd Then the plece came And the ambelens And we got in the hapldal so thats hold it all hapend.

One day the sun came up .
Me and Monica were going to town .
Then the sun was up .
And it was brighting in our eyes .
Then we couldn't see
and we almost went off the road .
Then we started to cry .
But we crashed .
Then the police came . And the ambulance .
And we got in the hospital .
So that's how it all happened .
The End

Her teacher liked this story quite a bit; she felt it was both creative and realistic and liked the use of detail: "If you live out here and you go to town in the morning, that's what happens. The sun gets in your eyes."

In general, Elaine's compositions from Year II show a much stronger sense of story than those from Year I. For instance, five of her stories from early in Year II have a clear chronological order; although a story may move episodically from one topic to another, the events seem at least temporally connected rather than disjointed. The change in Elaine's story sense stands out very clearly when comparing her Year II story about being the rodeo queen (shown earlier, p. XX) with a rodeo story from Year I. In the Year I story, all that happens (in 101 words) is that various people go to the rodeo, go home, go to school, and get mad. In the Year II story, in 42 words she sticks to one character (herself) and has a clear series of varied events.

3. Children were aware of and used humor, imagery, and richness of plot

Examples of this can be seen in three incidents. First of all, Anne says she likes one of her pieces because of the surprise ending. She called the ending "a joke" and laughed every time she read it. The class praised her highly when she read it aloud to them; they liked the ending, too.

Second, during Year I, the students were asked to write about what circus act they would like to be. Gordon added a typically vibrant

touch, about lions being whipped so they would jump through flaming circles. Although this was a very short story, no more than a vignette really, it created an image very effectively.

Finally, Gordon, in an interview, said that good writers are those who write funny stories and stories with "interesting stuff put in." When asked why he liked one of his stories less than some others, he said, "It's just about going in somebody's house! I mean it sounds boring like."

CONCLUSION
COMPLEXITY OF MEANING CREATION

Every piece of writing produced by the children in this study is a complex literacy event. The complexities of the processes involved in composition can be characterized as a collection of constraints, influences, or impacts on the making of meaning which stem from at least three sources: the literacy community, the writer, and the written text, all transacting with each other. Transaction is used in Rosenblatt's (1978) sense of the dynamic coming together of all these forces in such a way that they are all changed as a result of their contacts. The literacy community includes the influences of the home and school community on the background and experiences of the writer. It includes the nature of the writing assignments, the organization of the classroom, including the accessibility of materials and other resources, and the opportunity for exchange of ideas and sharing of writing with teachers and peers. The written text constrains the literacy event through the linguistic systems which can be manipulated during the evolving nature of the text.The writer provides all his or her knowledge, judgements and attitudes about language and language competence and about how the evolution of the written text is controlled.

What we see in our subjects is their developing control over all these factors. They effectively participate in the complex nature of such a literacy event each time that they write. In order for writing research to be meaningful, researchers must take into account the dynamic nature of all these transactions. In order to facilitate writing for children in schools, teachers and curriculum personnel must acknowledge the complexity of the process. Educators know enough about how children develop writing to free them from the sterile classroom where children stay in their seats quietly writing single narrowly conceived assignments provided by the teacher. As professionals concerned with the language arts, we have to find ways to make use of the richness of the literacy community, to value and trust the evolution of the written text, and to appreciate the strengths and knowledge inherent in every writer. In such a manner the classroom teacher will provide a rich environment and invite every writer to participate as early as possible in the writing process - which always involves the making of meaning.

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